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Address.

WILLIAM BEAUMONT.

A PIONEER AMERICAN PHYSIOLOGIST.*

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BALTIMORE.

Come with me for a few moments on a lovely June day in 1822, to what were then far-off northern wilds, to the Island of Michilimacinac, where the waters of Lake Michigan and Lake Huron unite and where stands Fort Mackinac, rich in the memories of Indian and voyageur, one of the four important posts on the upper lakes in the days when the rose and the fleur-de-lys strove for the mastery of the western world. Here the noble Marquette labored for his Lord, and here beneath the chapel of St. Ignace they laid his bones to rest. Here the intrepid LaSalle, the brave Tonty and the resolute Du Luht had halted in their wild wanderings. Its palisades and block-houses had echoed the war-whoops of Ojibwas and Ottawas, of Hurons and Iroquois, and the old fort had been the scene of bloody massacres and hard-fought fights, but at the conclusion of the War of 1812, after two centuries of struggle, peace settled at last on the island. The fort was occupied by United States troops, who kept the Indians in check and did general police duty on the frontier, and the place had become a rendezvous for Indians and voyageurs in the employ of the American Fur Company. On this bright spring morning the village presented an animated scene. The annual return tide to the trading post was in full course, and the beach was thronged with canoes and batteaux laden with the pelts of the winter's hunt. Voyageurs and Indians, men, women and children, with here and there a few soldiers, made up a motley crowd. Suddenly from the company's store there is a loud report of a gun, and amid the confusion and excitement the rumor spreads of an accident, and there is a hurrying of messengers to the barracks for a doctor. In a few minutes (Beaumont says twenty-five or thirty, an eye-witness says three) an alert-looking man in the uniform of a U. S. Army surgeon made his way through the crowd and was at the side of a young French Canadian who had been wounded by the dicharge of a gun, and with a composure bred of an exceptional experience of such injuries, prepared to make the examination. Though youthful in appearance, Surgeon Beaumont had seen much service, and at the capture of York and at the investment of Plattsburgh he had shown a coolness and bravery under fire which had won high praise from his superior officers. The man and the opportunity had met—the outcome is my story of this evening.

* An Address before the St. Louis Medical Society, Oct. 4, 1902.

I. THE OPPORTUNITY—ALEXIS ST. MARTIN.

On the morning of June 6 a young French Canadian, Alexis St. Martin, was standing in the company's store, "where one of the party was holding a shotgun (not a musket), which was accidentally discharged, the whole charge entering St. Martin's body. The muzzle was not over three feet from him—I think not more than two. The wadding entered, as well as pieces of his clothing; his shirt took fire; he fell, as we supposed, dead."

"Doctor Beaumont, the surgeon of the fort, was immediately sent for and reached the wounded man in a very short time, probably three minutes. We had just gotten him on a cot and were taking off some of his clothing. After the doctor had extracted part of the shot, together with pieces of clothing, and dressed his wound carefully, Robert Stuart and others assisting, he left him, remarking: 'The man can not live thirty-six hours; I will come and see him by and by.' In two or three hours he visited him again, expressing surprise at finding him doing better than he had anticipated. The next day, after getting out more shot and clothing and cutting off ragged edges of the wound, he informed Mr. Stuart, in my presence, that he thought he would recover."*

The description of the wound has been so often quoted as reported in Beaumont's work that I give here the interesting summary which I find in a "Memorial" presented to the Senate and House of Representatives by Beaumont. "The wound was received just under the left breast, and supposed, at the time, to have been mortal. A large portion of the side was blown off, the ribs fractured and openings made into the cavities of the chest and abdomen, through which protruded portions of the lungs and stomach, much lacerated and burnt, exhibiting altogether an appalling and hopeless case. The diaphragm was lacerated and a perforation made directly into the cavity of the stomach, through which food was escaping at the time your memorialist was called to his relief. His life was at first wholly despaired of, but he very unexpectedly survived the immediate effects of the wound, and necessarily continued a long time under the constant professional care and treatment of your memorialist, and, by the blessing of God, finally recovered his health and strength.

"At the end of about ten months the wound was partially healed, but he was still an object altogether miserable and helpless. In this situation he was declared 'a common pauper' by the civil authorities of the county, and it was resolved by them that they were not able, nor required, to provide for or support, and finally declined

* Statement of G. S. Hubbard, an officer of the company, who was present when St. Martin was shot, quoted by Dr. J. R. Baily, of Mackinac Island, in his address on the occasion of the Beaumont Memorial Exercises, Mackinac Island, July 10, 1900. The Physician and Surgeon, December, 1900.

taking care of him, and, in pursuance of what they probably believed to be their public duty, authorized by the laws of the territory, were about to transport him, in this condition, to the place of his nativity in lower Canada, a distance of more than fifteen hundred miles.

"Believing the life of St. Martin must inevitably be sacrificed if such attempt to remove him should be carried into execution at that time, your memorialist, after earnest, repeated, but unavailing, remonstrances against such a course of proceedings, resolved, as the only way to rescue St. Martin from impending misery and death, to arrest the process or transportation and prevent the consequent suffering, by taking him into his own private family, where all the care and attention were bestowed that his condition required.

"St. Martin was, at this time, as before intimated, altogether helpless and suffering under the debilitating effects of his wounds—naked and destitute of everything. In this situation your memorialist received, kept, nursed, medically and surgically treated and sustained him, at much inconvenience and expense, for nearly two years, dressing his wounds daily, and for considerable part of the time twice a day, nursed him, fed him, clothed him, lodged him and furnished him with such necessaries and comforts as his condition and suffering required.

"At the end of these two years he had become able to walk and help himself a little, though unable to provide for his own necessities. In this situation your memorialist retained St. Martin in his family for the special purpose of making physiological experiments."

In the month of May, 1825, Beaumont began the experiments. In June he was ordered to Fort Niagara, where, taking the man with him, he continued the experiments until August. He then took him to Burlington and to Plattsburgh. From the latter place St. Martin returned to Canada, without obtaining Dr. Beaumont's consent. He remained in Canada four years, worked as a voyageur, married and had two children. In 1829 Beaumont succeeded in getting track of St. Martin, and the American Fur Company engaged him and transported him to Fort Crawford on the upper Mississippi. The side and wound were in the same condition as in 1825. Experiments were continued uninterruptedly until March, 1831, when circumstances made it expedient that he should return with his family to lower Canada. The "circumstances," as we gather from letters, were the discontent and homesickness of his wife. As illustrating the mode of travel, Beaumont states that St. Martin took his family in an open canoe "via the Mississippi, passing by St. Louis, ascended the Ohio river, then crossed the state of Ohio to the lakes, and descended the Erie and Ontario and the river St. Lawrence to Montreal, where they arrived in June." Dr. Beaumont often lays stress on the physical vigor of St. Martin as showing how completely he had recovered from the wound. In November, 1832, he again engaged himself to submit to another series of experiments in Plattsburgh and Washington. The last recorded experiment is in November, 1833.

Among the Beaumont papers, for an examination of which I am much indebted to his daughter, Mrs. Kein (Appendix A), there is a large mass of correspondence relating to St. Martin, extending from 1827, two years after he had left the doctor's employ, to October, 1852. Alexis was in Dr Beaumont's employ in the periods already specified. In 1833 he was enrolled in the United States Army at Washington as Sergeant Alexis St. Martin, of a detachment of orderlies stationed at the War Department. He was then 28 years of age, and was five feet five inches in height.

Among the papers there are two articles of agreement, both signed by the contracting parties, one dated Oct. 19, 1833, and the other November 7 of the same year. In the former he bound himself for a term of one year to "serve, abide and continue with the said William Beaumont, wherever he shall go or travel or reside in any part of the world his covenant servant and diligently and faithfully, etc., . . . that he, the said Alexis, will at all times during said term when thereto directed or required by said William, submit to assist and promote by all means in his power such philosophical or medical experiments as the said William shall direct or cause to be made on or in the stomach of him, the said Alexis, either through and by means of the aperture or opening thereto in the side of him, the said Alexis, or otherwise, and will obey, suffer and comply with all reasonable and proper orders of or experiments of the said William in relation thereto and in relation to the exhibiting and showing of his said stomach and the powers and properties thereto and of the appurtenances and the powers, properties and situation and state of the contents thereof." The agreement was that he should be paid his board and lodging and $150 for the year. In the other agreement it is for two years and the remuneration $400. He was paid a certain amount of the money down.

There are some letters from Alexis himself, all written for him and signed with his mark. In June, 1834, he writes that his wife was not willing to let him go and thinks that he can do a great deal better to stay at home. From this time on Alexis was never again in Dr. Beaumont's employ.

There is a most interesting and protracted correspondence in the years 1836, 1837, 1838, 1839, 1840, 1842, 1846, 1851 and 1852, all relating to attempts to induce Alexis to come to St. Louis. For the greater part of this time he was in Berthier, in the district of Montreal, and the correspondence was chiefly conducted with a Mr. William Morrison, who had been in the northwest fur trade and who took the greatest interest in Alexis and tried to induce him to go to St. Louis. (See Appendix B.)

In 1846 Beaumont sent his son Israel for Alexis, and in a letter dated Aug. 9, 1846, his son writes from Troy: "I have just returned from Montreal, but without Alexis. Upon arriving at Berthier I found that he owned and lived on a farm about fifteen miles southwest of the village." Nothing would induce him to go.

The correspondence with Mr. Morrison in 1851 and 1852 is most voluminous, and Dr. Beaumont offered Alexis $500 for the year, with comfortable support for his family. He agreed at one time to go, but it was too late in the winter and he could not get away.

The last letter of the series is dated Oct. 15, 1852, and is from Dr. Beaumont to Alexis, whom he addresses as *Mon Ami*. Two sentences in this are worth quoting: "Without reference to past efforts and disappointments —or expectation of ever obtaining your services again for the purpose of experiments, etc., upon the proposals and conditions heretofore made and suggested, I now proffer to you in faith and sincerity, new, and I hope satisfactory, terms and conditions to ensure your prompt and faithful compliance with my most fervent desire to have you again with me—not only for my own individual gratification, and the benefits of medical science, but also for your own and family's present good and

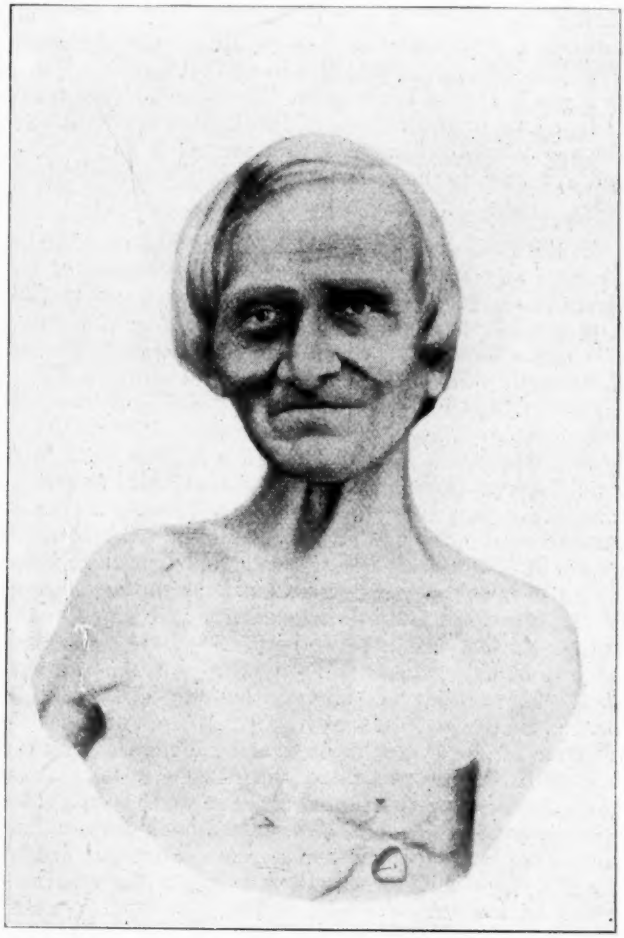
future welfare." He concludes with, "I can say no more, Alexis—you know what I *have* done for you many years since—what I have been *trying,* and am still anxious and wishing to do with and for you—what efforts, anxieties, anticipations and disappointments I have suffered from your non-fulfilment of my expectations. Don't disappoint me more nor forfeit the bounties and blessings reserved for you."

So much interest was excited by the report of the experiments that it was suggested to Beaumont that he should take Alexis to Europe and submit him there to a more extended series of observations by skilled physiologists. Writing June 10, 1833, he says: "I shall engage him for five or six years if he will agree, of which I expect there is no doubt. He has always been pleased with the idea of going to France. I feel much gratified at the expression of Mr. Livingston's desire that we should visit Paris, and shall duly consider the interest he takes in the subject and make the best arrangements I can to meet his views and yours." Mr. Livingston, the American minister, wrote from Paris March 18, 1834, saying that he had submitted the work to Orfila and the Academy of Sciences, which had appointed a committee to determine if additional experiments were necessary and whether it was advisable to send to America for Alexis. Nothing, I believe, ever came of this, nor, so far as I can find, did Alexis visit Paris. Other attempts were made to secure him for purposes of study. In 1840 a student of Dr. Beaumont's, George Johnson, then at the University of Pennsylvania, wrote saying that Dr. Jackson had told him of efforts made to get Alexis to London, and Dr. Gibson informed him that the Medical Society of London had raised £300 or £400 to induce St. Martin to come, and that he, Dr. Gibson, had been trying to find St. Martin for his London friends. There are letters in the same year from Dr. R. D. Thomson of London to Professor Silliman urging him to arrange that Dr. Beaumont and Alexis should visit London. In 1856 St. Martin was under the observation of Dr. Francis Gurney Smith, in Philadelphia, who reported a brief series of experiments, so far as I know the only other report made on him.*

St. Martin had to stand a good deal of chaffing about the hole in his side. His comrades called him "the man with a lid on his stomach." In his memorial address Mr. C. S. Osborn of Sault Ste. Marie states that Miss Catherwood tells a story of Etienne St. Martin fighting with Charlie Charette because Charlie ridiculed his brother. Etienne stabbed him severely and swore that he would kill the whole brigade if they did not stop deriding his brother's stomach.

At one time St. Martin traveled about exhibiting the wound to physicians, medical students and before medical societies. In a copy of Beaumont's work, formerly belonging to Austin Flint, Jr., and now in the possession of a physician of St. Louis, there is a photograph of Alexis sent to Dr. Flint. There are statements made that he went to Europe, but of such a visit I can find no record.

My interest in St. Martin was of quite the general character of a teacher of physiology, who every session referred to his remarkable wound and showed Beaumont's book with the illustration. In the spring of 1880, while still a resident of Montreal, I saw a notice in the newspapers of his death at St. Thomas. I immediately wrote to a physician and to the parish priest, urging them to secure me the privilege of an autopsy and offering to pay a fair sum for the stomach, which I agreed to place in the Army Medical Museum in Washington, but without avail. Subsequently, through the kindness of the Hon. Mr. Justice Baby, I obtained the following details of St. Martin's later life, and the picture here given, which was taken the year before his death so as to show the wound, which I here show you. Judge Baby writes to his friend, Prof. D. C. MacCallum of Montreal, as follows: "I have much pleasure to-day in placing in your hands such information about St. Martin as Revd. Mr. Chicoine, Curé of St. Thomas, has just handed over to me. Alexis Bidigan, *dit* St. Martin, died at St. Thomas de Joliette on the 24th of June, 1880, and was buried in the cemetery of the parish on the 28th of the same month. The last sacraments of the



ALEXIS ST. MARTIN, AGED 81.

Catholic church were ministered to him by the Revd. Curé Chicoine, who also attended at his burial service. The body was then in such an advanced stage of decomposition that it could not be admitted into the church, but had to be left outside during the funeral service. The family resisted all requests—most pressing as they were—on the part of the members of the medical profession for an autopsy, and also kept the body at home much longer than usual and during a hot spell of weather, so as to allow decomposition to set in and baffle, as they thought, the doctors of the surrounding country and others. They had also the grave dug eight feet below the surface of the ground in order to prevent any attempt at a resurrection. When he died St. Martin was 83 years of age, and left a widow, whose maiden name was Marie Joly. She survived him by

* Medical Examiner, 1856, and Experiments on Digestion, Phila., 1856.

nearly seven years, dying at St. Thomas on the 20th of April, 1887, at the very old age of 90 years. They left four children still alive—Alexis, Charles, Henriette and Marie.

"Now I may add the following details for myself. When I came to know St. Martin it must have been a few years before his death. A law suit brought him to my office here in Joliette. I was seized with his interests; he came to my office a good many times, during which visits he spoke to me at great length of his former life, how his wound had been caused, his peregrinations through Europe and the United States, etc. He showed me his wound. He complained bitterly of some doctors who had awfully misused him, and had kind words for others. He had made considerable money during his tours, but had expended and thrown it all away in a frolicsome way, especially in the old country. When I came across him he was rather poor, living on a small, scanty farm in St. Thomas, and very much addicted to drink, almost a drunkard one might say. He was a tall, lean man, with a very dark complexion, and appeared to me then of a morose disposition."

II. THE BOOK.

In the four periods in which Alexis had been under the care and study of Beaumont a large series of observations had been recorded, amounting in all to 238. A preliminary account of the case and of the first group of observations appeared in the *Philadelphia Medical Recorder* in January, 1825. During the stay in Washington in 1832 the great importance of the observations had become impressed on the Surgeon-General, Dr. Lovell, who seems to have acted in a most generous and kindly spirit. Beaumont tried to induce him to undertake the arrangement of the observations, but Lovell insisted that he should do the work himself. In the spring of 1833 Alexis was taken to New York and there shown to the prominent members of the profession, and careful drawings and colored sketches were made of the wound by Mr. King. A prospectus of the work was issued and was distributed by the Surgeon-General, who speaks in a letter of sending them to Dr. Franklin Bache and to Dr. Stewart of Philadelphia, and in a letter from Dr. Bache to Dr. Beaumont acknowledging the receipt of a bottle of gastric juice, Bache states that he has placed the prospectus in Mr. Judah Dobson's store and has asked for subscribers. Beaumont did not find New York a very congenial place. He complained of the difficulty of doing the work owing to the vexatious social intercourse. He applied for permission to go to Plattsburgh, in order to complete the book. After having made inquiries in New York and Philadelphia about terms of publication he decided, as the work had to be issued at his own expense, that it could be as well and much more cheaply printed at Plattsburgh, where he would also have the advice and help of his cousin, Dr. Samuel Beaumont. In a letter to the Surgeon-General, dated June 10, 1833, he acknowledges the permission to go to Plattsburgh, and says: "I shall make my arrangements to leave here for Pl. in about a week to *rush* the execution of the Book as fast as possible. I am now having the drawings taken by Mr. King engraved here."

The summer was occupied in making a fresh series of experiments and getting the work in type. On December 3 he writes the Surgeon-General that the book will be ready for distribution in a few days and that 1,000 copies will be printed.

The work is an octavo volume of 280 pages, entitled "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," by William Beaumont, M.D., Surgeon in the United States Army. Plattsburgh. Printed by F. P. Allen, 1833. While it is well and carefully printed, the paper and type are not of the best, and one can not but regret that Beaumont did not take the advice of Dr. Franklin Bache, who urged him strongly not to have the work printed at Plattsburgh, but in Philadelphia, where it could be done in very much better style. The dedication of the work to Joseph Lovell, M.D., Surgeon-General of the United States Army, acknowledges in somewhat laudatory terms the debt which Beaumont felt he owed to his chief, who very gratefully acknowledges the compliment and the kindly feeling, but characterizes the dedication as "somewhat apocryphal."

The work is divided into two main portions; first, the preliminary observations on the general physiology of digestion in seven sections: Section I, Of Aliment; Section II, Of Hunger and Thirst; Section III, of Satisfaction and Satiety; Section IV, Of Mastication, Insalivation and Deglutition; Section V, Of Digestion by the Gastric Juice; Section VI, Of the Appearance of the Villous Coat, and of the Motions of the Stomach; Section VII, Of Chylification and Uses of the Bile and Pancreatic Juice. The greater part of the book is occupied by the larger section of the detailed account of the four series of experiments and observations. The work concludes with a series of 51 inferences from the foregoing experiments and observations.

The subsequent history of the book itself is of interest, and may be dealt with here. In 1834 copies of the Plattsburgh edition, printed by F. P. Allen, were issued by Lilly, Wait & Co., of Boston.

In the Beaumont correspondence there are many letters from a Dr. McCall, in Utica, N. Y., who was an intimate friend of a Mr. Wm. Combe, a brother of the well-known physiologist and popular writer, Dr. Andrew Combe of Edinburgh. Doubtless it was through this connection that in 1838 Dr. Combe issued an edition in Scotland, with numerous notes and comments. (Appendix C.)

The second edition was issued from Burlington, Vt., in 1847, with the same title page, but after Second Edition there are the words, Corrected by Samuel Beaumont, M.D., who was Dr. William Beaumont's cousin. In the preface to this edition the statement is made that the first edition, though a large one of 3,000 copies, had been exhausted. This does not agree with the statement made in a letter of Dec. 3, 1833, to the Surgeon-General, stating that the edition was to be 1,000 copies. Of course more may have been printed before the type was distributed. While it is stated to be a new and improved edition, so far as I can gather it is a verbatim reprint, with no additional observations, but with a good many minor corrections. In an appendix (D) I give an interesting letter from Dr. Samuel Beaumont with reference to the issue of this edition.

A German edition was issued in 1834 with the following title: "Neue Versuche und Beobachtungen ueber den Magensaft und die Physiologie der Verdauung, auf eine hochst merkwurdige Weise wahrend einer Reihe von 7 Jahren, an einen und demselben Subject angestellt." Beaumont's earlier paper, already referred to, was abstracted in the Magazin der auslandischen Litteratur der gesammten Heilkunde, Hamburg, 1826, and also in the Archives generales de Medecine, Paris, 1828. I can not find that there was a French edition of the work.

The "Experiments and Observations" attracted universal attention, both at home and abroad. The jour-

nals of the period contained very full accounts of the work, and within a few years the valuable additions to our knowledge filtered into the text-books of physiology, which to-day in certain descriptions of the gastric juice and of the phenomena of digestion even the very language of the work is copied.

III. THE VALUE OF BEAUMONT'S OBSERVATIONS.

There had been other instances of artificial gastric fistula in man which had been made the subject of experimental study, but the case of St. Martin stands out from all others on account of the ability and care with which the experiments were conducted. As Dr. Combe says, the value of these experiments consists partly in the admirable opportunities for observation which Beaumont enjoyed, and partly in the candid and truth-seeking spirit in which all his inquiries seem to have been conducted. "It would be difficult to point out any observer who excels him in devotion to truth and freedom from the trammels of theory or prejudice. He tells plainly what he saw and leaves every one to draw his own inferences, or where he lays down conclusions he does so with a degree of modesty and fairness of which few perhaps in his circumstances would have been capable."

To appreciate the value of Beaumont's studies it is necessary to refer for a few moment's to our knowledge of the physiology of digestion in the year 1832, the date of the publication. Take, for example, "The Work on Human Physiology" (published in the very year of the appearance of Beaumont's book), by Dunglison, a man of wide learning and thoroughly informed in the literature of the subject. The five or six old theories of stomach digestion, concoction, putrefaction, trituration, fermentation and maceration, are all discussed, and Wm. Hunter's pithy remark is quoted, "some physiologists will have it, that the stomach is a mill, others, that it is a fermenting vat, others, again, that it is a stew-pan; but, in my view of the matter, it is neither a mill, a fermenting vat nor a stew-pan; but a stomach, gentlemen, a stomach."

The theory of chemical solution is accepted. This had been placed on a sound basis by the experiments of Reaumur, Spallanzani and Stevens, while the studies of Tiedemann and Gmelin and of Prout had done much to solve the problems of the chemistry of the juice. But very much uncertainty existed as to the phenomena occurring during digestion in the stomach, the precise mode of action of the juice, the nature of the juice itself and its action outside the body. On all these points the observations of Beaumont brought clearness and light where there had been previously the greatest obscurity.

The following may be regarded as the most important of the results of Beaumont's observations: First, the accuracy and completeness of description of the gastric juice itself. You will all recognize the following quotation, which has entered into the text-books and passes current to-day. "Pure gastric juice, when taken directly out of the stomach of a healthy adult, unmixed with any other fluid, save a portion of the mucus of the stomach with which it is most commonly and perhaps always combined, is a clear, transparent fluid; inodorous; a little saltish, and very perceptibly acid Its taste, when applied to the tongue, is similar to this mucilaginous water slightly acidulated with muriatic acid. It is readily diffusible in water, wine or spirits; slightly effervesces with alkalies; and is an effectual solvent of the *materia alimentaria*. It possesses the property of coagulating albumen, in an eminent degree; is powerfully antiseptic, checking the putrefaction of meat; and effectually restorative of healthy action, when applied to old, foetid sores and foul, ulcerating surfaces."

Secondly, the confirmation of the observation of Prout that the important acid of the gastric juice was the muriatic or hydrochloric. An analysis of St. Martin's gastric juice were made by Dunglison, at that time a professor in the University of Virginia, and by Benjamin Silliman of Yale, both of whom determined the presence of free hydrochloric acid. A specimen was sent to the distinguished Swedish chemist, Berzelius, whose report did not arrive in time to be included in the work. In a letter dated July 19, 1834, he writes to Professor Silliman that he had not been able to make a satisfactory analysis of the juice. The letter is published in *Silliman's Journal*, Vol. 27, July, 1835.

Thirdly, the recognition of the fact that the essential elements of the gastric juice and the mucus were separate secretions.

Fourthly, the establishment by direct observation of the profound influence on the secretion of the gastric juice and on digestion of mental disturbances.

Fifthly, a more accurate and fuller comparative study of the digestion in the stomach with digestion outside the body, confirming in a most elaborate series of experiments the older observations of Spallanzani and Stevens.

Sixthly, the refutation of many erroneous opinions relating to gastric digestion and the establishment of a number of minor points of great importance, such as, for instance, the rapid disappearance of water from the stomach through the pylorus, a point brought out by recent experiments, but insisted on and amply proven by Beaumont.

Seventhly, the first comprehensive and thorough study of the motions of the stomach, observations on which, indeed, are based the most of our present knowledge.

And lastly, a study of the digestibility of different articles of diet in the stomach, which remains to-day one of the most important contributions ever made to practical dietetics.

The greater rapidity with which solid food is digested, the injurious effects on the stomach of tea and coffee, when taken in excess, the pernicious influence of alcoholic drinks on the digestion, are constantly referred to. An all-important practical point insisted on by Beaumont needs emphatic reiteration to this generation: "The system requires much less than is generally supplied to it. The stomach disposes of a definite quantity. If more be taken than the actual wants of the economy require, the residue remains in the stomach and becomes a source of irritation and produces a consequent aberration of function, or passes into the lower bowel in an undigested state, and extends to them its deleterious influence. Dyspepsia is oftener the effect of over-eating and over-drinking than of any other cause."

One is much impressed, too, in going over the experiments, to note with what modesty Beaumont refers to his own work. He speaks of himself as a humble "enquirer after truth and a simple experimenter." "Honest objection, no doubt, are entertained against the doctrine of digestion by the gastric juice. That they are so entertained by these gentlemen I have no doubt. And I cheerfully concede to them the merit of great ingenuity, talents and learning, in raising objections to the commonly received hypothesis, as well as ability in maintaining their peculiar opinions. But we ought

not to allow ourselves to be seduced by the ingenuity of argument or the blandishments of style. Truth, like beauty, when 'unadorned is adorned the most'; and in prosecuting these experiments and inquiries, I believe I have been guided by its light. Facts are more persuasive than arguments, however ingeniously made, and by their eloquence I hope I have been able to plead for the support and maintenance of those doctrines which have had for their advocates such men as Sydenham, Hunter, Spallanzani, Richerand, Abernethy, Broussais, Philip, Paris, Bostock, the Heidelburg and Paris professors, Dunglison, and a host of other luminaries in the science of physiology."

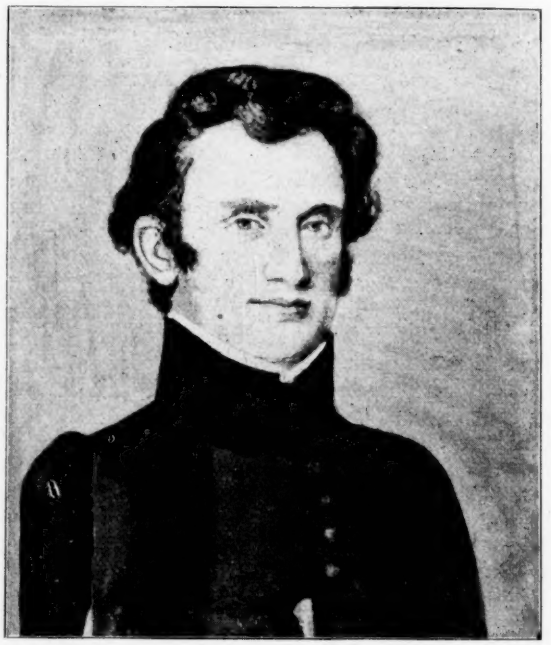
In reality Beaumont anticipated some of the most recent studies in the physiology of digestion. Doubtless many of you have heard of Professor Pawlow's, of St. Petersburg, new work on the subject. It has been translated into German, and I see that an English edition is advertised. He has studied the gastric juice in an isolated pouch, ingeniously made at the fundus of the stomach of the dog, from which the juice could be obtained in a pure state. One of his results is the very first announced by Beaumont and confirmed by scores of observations on St. Martin, viz., that, as he says, "the gastric juice never appears to be accumulated in the cavity of the stomach while fasting." Pawlow has shown very clearly that there is a relation between the amount of food taken and the quantity of gastric juice secreted. Beaumont came to the same conclusion: "when aliment is received the juice is given in exact proportion to its requirements for solution." A third point on which Pawlow lays stress is the curve of secretion of the gastric juice, the manner in which it is poured out during digestion. The greatest secretion, he has shown, takes place in the earlier hours. On this point hear Beaumont: "It (the gastric juice) then begins to exude from the proper vessels and increases in proportion to the quantity of aliment naturally required and received." And again: "When a due and moderate supply of food has been received it is probable that the whole quantity of gastric juice for its complete solution is secreted and mixed with it in a short time." A fourth point, worked out beautifully by Pawlow, is the adaptation of the juice to the nature of the food, on which I do not see any reference by Beaumont, but there are no experiments more full than those in which he deals with the influence of exercise, weather and the emotions on the quantity of the juice secreted.

IV. MAN AND DOCTOR.

Sketches of Dr. Beaumont's life have appeared from time to time. There is a worthy memoir by Dr. T. Reyburn in the *St. Louis Medical and Surgical Journal,* 1854, and Dr. A. J. Steele, at the first annual commencement of the Beaumont Medical College, 1887, told well and graphically the story of his life. A few years ago Dr. Frank J. Lutz, of this city, sketched his life for the memorial meeting of the Michigan State Medical Society on the occasion of the dedication of a Beaumont monument.

Among the papers kindly sent to me by his daughter, Mrs. Keim, are many autobiographical materials, particularly relating to his early studies and to his work as a surgeon in the War of 1812. There is an excellent paper in the handwriting, it is said, of his son, giving a summary of the earlier period of his life. So far as I know this has not been published, and I give it in full:

Dr. William Beaumont was born in the town of Lebanon, Conn., on the 21st day of November, A. D. 1785. His father was a thriving farmer and an active politician of the proud old Jeffersonian school, whose highest boast was his firm support and strict adherence to the honest principles he advocated. William was his third son, who, in the winter of 1806-7, in the 22d year of his age, prompted by a spirit of independence and adventure, left the paternal roof to seek a fortune and a name. His outfit consisted of a horse and cutter, a barrel of cider, and one hundred dollars of hard-earned money. With this he started, laying his course northwardly, without any particular destination, Honor his rule of action, Truth his only landmark, and trust placed implicitly in Heaven. Traversing the western part of Massachusetts and Vermont in the spring of 1807 he arrived at the little village of Champlain, N. Y., on the Canada frontier—an utter stranger, friendless and alone. But honesty of purpose and true energy invariably work good results. He soon gained the people's confidence and was entrusted with their village school, which he conducted about three years, devoting his leisure hours to the study of medical works from the library of Dr. Seth Pomeroy, his first patron. He then went over to St. Albans, Vt., where he entered the office of Dr. Benjamin Chandler and commenced a regular course of medical reading, which he followed for two years, gaining the utmost



WILLIAM BEAUMONT.

confidence and esteem of his kind preceptor and friends. About this time the War of 1812 commenced, and he applied for an appointment in the U. S. Army, successfully. He was appointed assistant-surgeon to the Sixth Infantry, and joined his regiment at Plattsburgh, N. Y., on the 13th of September, 1812. On the 19th of March, 1813, he marched from Plattsburgh with the First Brigade, for Sackett's Harbor, where they arrived on the 27th inst. Here he remained in camp till the 22d of April, when he embarked with the troops on Lake Ontario. His journal will best tell this portion of his history:

"April 22, 1813.—Embarked with Captain Humphreys, Walworth and Muhlenburg, and companies on board the Schooner 'Julia.' The rest of the brigade, and the Second, with Foresith's Rifle Regiment and the Eighth Artillery, on board a ship, brig and schooner—remain in the harbor till next morning.

"23d.—11 o'clock a. m.—Weighs anchor and put out under the impression we were going to Kingston. Got out 15 or 20 miles—encountered a storm—wind ahead and the fleet returned to harbor.

"24th.—6 o'clock a. m.—Put out with a fair wind—mild and pleasant—the fleet sailing in fine order.

"26th.—Wind pretty strong—increasing—waves run high, tossing our vessels roughly. At half past four pass the mouth of Niagara river. This circumstance baffles imagination as to

where we are going—first impressed with the idea of Kingston—then to Niagara—but now our destination must be 'Little York.' At sunset came in view of York Town and the Fort, where we lay off some 3 or 4 leagues for the night.

"27th.—Sailed into harbor and came to anchor a little below the British Garrison. Filled the boats and effected a landing, though not without difficulty and the loss of some men. The British marched their troops down the beach to cut us off as landing, and, though they had every advantage, they could not effect their design. A hot engagement ensued, in which the enemy lost nearly a third of their men and were soon compelled to quit the field, leaving their dead and wounded strewn in every direction. They retired to the Garrison, but from the loss sustained in the engagement, the undaunted courage of our men, and the brisk firing from our fleet, with the 12 and 32 pounders, they were soon obliged to evacuate it and retreat with all possible speed.—Driven to this alternative they devised the inhuman project of blowing up their magazine, containing 300 pounds of powder, the explosion of which had well-nigh destroyed our army. Over 300 were wounded and about 60 killed on the spot, by stones of all dimensions falling, like a shower of hail, in the midst of our ranks. A most distressing scene ensues in the hospital. Nothing is heard but the agonizing groans and supplications of the wounded and the dying. The surgeons wade in blood cutting off arms and legs and trepaning heads, while the poor sufferers cry, 'O, my God! Doctor, relieve me from this misery! I can not live!' 'Twas enough to touch the veriest heart of steel and move the most relentless savage. Imagine the shocking scene, where fellow-beings lie mashed and mangled—legs and arms broken and sundered—heads and bodies bruised and mutilated to disfigurement! My deepest sympathies were roused—I cut and slashed for 36 hours without food or sleep.

"29th.—Dressed upwards of 50 patients—from simple contusions to the worst of compound fractures—more than half the latter. Performed two cases of amputation and one of trepaning. At 12 p. m. retired to rest my fatigued body and mind."

One month after the taking of York he witnessed the storming of Fort George. The troops were transported from York to "Four-Mile Creek" (in the vicinity of Ft. George), where they encamped from the 10th of May to the 27th, when they advanced to the attack. His journal runs thus:

"May 27 (1813).—Embarked at break of day—Col. Scott with 800 men, for the advanced guard, supported by the First Brigade, commanded by General Boyd, moved in concert with the shipping to the enemy's shore and landed under their battery and in front of their fire with surprising success, not losing more than 30 men in the engagement, though the enemy's whole force was placed in the most advantageous situation possible. We routed them from their chosen spot—drove them from the country and took possession of the town and garrison."

On the 11th of September, 1814, he was at the Battle of Plattsburgh, still serving as assistant-surgeon, though doing all the duty of a full surgeon. At the close of the war, in 1815, when the Army was cut down, he was retained in service, but resigned soon after, deeming himself unjustly treated by the government in having others, younger and less experienced, promoted over him.

In 1816 he settled in Plattsburgh and remained there four years in successful practice. In the meantime his army friends had persuaded him to join the service again, and, having applied, he was reappointed, in 1820, and ordered to Ft. Mackinac as post surgeon. At the end of the first year he obtained leave of absence, returned to Plattsburgh and married one of the most amiable and interesting ladies of that place. (She still survives her honored husband, and in her green old age is loved devotedly by all who know her.) He returned to Mackinac the same year, and in 1822 came in possession of Alexis St. Martin, the subject of his "Experiments on the Gastric Juice." By the accidental discharge of his gun, while hunting, St. Martin had dangerously wounded himself in the abdomen and came under the treatment of Dr. Beaumont, who healed the wound (in itself a triumph of skill almost unequaled) and in 1825 commenced a series of experiments, the results of which have a world-wide publication. These experiments were continued, with various interruptions, for eight years, during which time he was ordered from post to post—now at Niagara, N. Y., anon as Green Bay, Mich., and finally at Fort Crawford, on the Mississippi. In 1834 he was ordered to St. Louis, where he remained in service till 1839, when he resigned. He then commenced service with the citizens of St. Louis, and from that time till the period of his last illness, enjoyed an extensive and distinguished practice, interrupted only by the base attacks of a few disgraceful and malicious knaves (self-deemed members of the medical profession) who sought to destroy a reputation which they could not share. They gained nothing except some little unenviable notoriety and they have skulked away like famished wolves, to die in their hiding places.

The dates of Beaumont's commissions in the army are as follows: Surgeon's Mate, Sixth Regiment of Infantry, Dec. 2, 1812; Cavalry, March 27, 1819; Post Surgeon, Dec. 4, 1819; Surgeon First Regiment and Surgeon, Nov. 6, 1826.

From the biographical sketches of Reyburn, Steele and Lutz, and from the personal reminiscences of his friends, Drs. J. B. Johnson, S. Pollak and Wm. McPheeters, who fortunately remains with you, full of years and honors, we gather a clearly-defined picture of the latter years of his life. It is that of a faithful, honest, hard-working practitioner, doing his duty to his patients, and working with zeal and ability for the best interests of the profession. The strong common sense which he exhibited in his experimental work made him a good physician and a trusty adviser in cases of surgery. Among his letters there are some interesting pictures of his life, particularly in his letters to his cousin, Dr. Samuel Beaumont. Writing to him April 4, 1846, he says:

I have a laborious, lucrative and increasing practice, more than I can possibly attend to, though I have an assistant, Dr. Johnson, a young man who was a pupil of mine from 1835 to 1840. He then went to Philadelphia a year or two to attend lectures, and graduated, and returned here again in 1842, and has been very busy ever since and is so now, but notwithstanding I decline more practice daily than half the doctors in the city get in a week. You thought when you were here before that there was too much competition for you ever to think of succeeding in business here—there is ten times as much now and the better I succeed and prosper for it. You must come with a different feeling from your former—with a determination to follow in my wake and stem the current that I will break for you. I am now in the grand climacteric of life, threescore years and over, with equal or more zeal and ability to do good and contribute to professional service than at forty-five, and I now look forward with pleasing anticipation of success and greater usefulness—have ample competence for ourselves and children, and no doleful or dreaded aspect of the future—to be sure I have to wrestle with some adverse circumstances of life, and more particularly to defend myself against the envious, mean and professional jealousies and the consequent prejudices of some men, but I triumph over them all and go ahead in defiance of them.*

His professional work increased enormously with the rapid growth of the city, but he felt, even in his old age, that delicious exhilaration which it is your pleasure and privilege to enjoy here in the west in a degree rarely experienced by your eastern confrères. Here is a cheery paragraph from a letter dated Oct. 20, 1852: "Domestic affairs are easy, peaceable and pleasant. Health of community good—no severe epidemic diseases prevalent—weather remarkably pleasant—business of all kinds increasing—product of the earth abundant—money plenty—railroads progressing with almost tele-

* He had evidently hopes that when his cousin and son arrived with Alexis they would arrange and plan for another series of experiments and in another year or two make another book, better than the old one.

graphic speed—I expect to come to Plattsburgh next summer all the way by rail."

But work was becoming more burdensome to a man nearing threescore years and ten, and he expresses it in another letter when he says: "There is an immense professional practice in this city. I get tired of it, and have been trying hard to withdraw from it altogether, but the more I try the tighter I seem to be held to it by the people. I am actually persecuted, worried and almost worn out with valetudinarian importunities and hypochondriacal groans, repinings and lamentations—Amen."

He continued at work until March, 1853, when he had an accident—a fall while descending some steps. A few weeks later a carbuncle appeared on the neck, and proved fatal April 25. One who knew him well wrote the following estimate (quoted by Dr. F. J. Lutz in his sketch of Beaumont):

"He was gifted with strong natural powers, which working upon an extensive experience in life, resulted in a species of natural sagacity, which, as I suppose, was something peculiar in him, and not to be attained by any course of study. His temperament was ardent, but never got the better of his instructed and disciplined judgment, and whenever or however employed, he ever adopted the most judicious means for attaining ends that were always honorable. In the sick room, he was a model of patience and kindness, his intuitive perceptions, guiding a pure benevolence, never failed to inspire confidence, and thus he belonged to that class of physicians whose very presence affords Nature a sensible relief."

You do well, citizens of St. Louis and members of our profession, to cherish the memory of William Beaumont. Alive you honored and rewarded him, and there is no reproach against you of neglected merit and talents unrecognized. The profession of the northern part of the state of Michigan has honored itself in erecting a monument to his memory near the scene of his disinterested labors in the cause of humanity and science. His name is linked with one of your educational institutions, and joined with that of a distinguished laborer in another field of practice. But he has a far higher honor than any you can give him here—the honor that can only come when the man and the opportunity meet—and match. Beaumont is the pioneer physiologist of this country, the first to make an important and enduring contribution to this science. His work remains a model of patient, persevering investigation, experiment and research, and the highest praise we can give him is to say that he lived up to and fulfilled the ideals with which he set out and which he expressed when he said: "Truth, like beauty, when 'unadorned, is adorned the most,' and, in prosecuting these experiments and enquiries, I believe I have been guided by its light."

APPENDIX A.

The Beaumont papers in the possession of his daughter, Mrs. Keim of St. Louis, consist of (1) interesting certificates from his preceptors, Dr. Pomeroy and Dr. Chandler, the license from the Third Medical Society of Vermont, the commissions in the U. S. Army, several certificates of honorary membership in societies, and the parchment of the M.D. degree conferred upon him, *honoris causa*, by the Columbian University of Washington, 1833; (2) a journal containing his experiences in the War of 1812, from which I give an extract, a journal of his trip to Fort Mackinac, a journal containing the reports of many cases, among them that of St. Martin (in addition there is a protocol of the case in loose folio sheets), a journal of the experiments, and a commonplace book of receipts and jottings; (3) an extensive correspondence relating to St. Martin and the book, and many rough drafts of sections of the book; (4) a large mass of personal correspondence, much of it of interest as relating to conditions of practice in St. Louis.

The picture reproduced here in his army uniform is from a miniature; the picture which has been previously reproduced is of an older man from a daguerreotype. It is satisfactory to know that the ultimate destination of this most valuable collection of papers is the Surgeon-General's Library of the United States Army, of which Dr. Beaumont was so distinguished an ornament.

APPENDIX B.

On Oct. 20, 1853, he writes to his cousin, Dr. Samuel Beaumont, on the subject of "that old, fistulous Alexis," as he calls him. "Alexis' answer to yours is the very fac-simile or stereotype of all his Jesuitical letters to me for the last fifteen years. His object seems only to be to get a heavy bonus and undue advance from me and then disappoint and deceive me, or to palm and impose himself and whole family upon me for support for life.

"I have evaded his designs so far; but I verily fear that the strong and increasing impulse of conscious conviction of the great benefits and important usefulness of further and more accurate physiological investigation of the subject will compel me to still further efforts and sacrifices to obtain him. Physiological authors and most able writers on dietetics and gastric functions generally demand it of me in trumpet tones.

"I must have him at all hazards, and obtain the necessary assistance to my individual and private efforts or transfer him to some competent scientific institution for thorough investigation and report—I must retrieve my past ignorance, imbecility and professional remissness of a quarter of a century, or more, by double diligence, intense study and untiring application of soul and body to the subject before I die—

> Should posthumous Time retain my name,
> Let historic truths declare my fame.

"Simultaneous with this I write to Mr. Morrison and Alexis my last and final letters—perhaps, proposing to *him*, as bribe to his cupidity, to give him $500 to come to me *without* his family, for one year—$300 of them for his salary, and $200 for the support and contentment of his family to remain in Canada in the meantime—with the privilege of bringing them on here another year, upon my former proposition of $300 a year, at his own expense and responsibility and support them himself after they get here out of his $300 salary—I think he will take the bait and come on this fall, and when I get him alone again into my keeping and engagement, I will take good care to control him as I please."

APPENDIX C.

Letter from Dr. Andrew Combe, May 1, 1838:

"My Dear Sir—May I beg your acceptance of the accompanying volumes as a small expression of my respect for your character and scientific labors. I need not detain you by repeating in this note the high estimation in which I hold you. The volumes herewith sent will, I trust, convince you of the fact, and that it will not be my fault if you do not receive the credit justly due to your valuable and disinterested services. I remain, My Dear Sir, Very respectfully yours,

"ANDW. COMBE."

APPENDIX D.

Letter from Dr. Samuel Beaumont, March 16, 1846:

"Your letter of the 1st of February arrived here in the course of mail, and I have attended to the business which you authorized me to do. I am afraid, however, that you will be disappointed, and perhaps dissatisfied with the arrangement. Mr. Goodrich came here some five or six days after I received your letter, and made his proposal, which was to give you every tenth copy for the privilege of publishing an edition. The number he proposed to publish was fifteen hundred, which would give you 150 copies. I did not like to close the bargain on this condition, and he was not disposed to give any more. This was in the evening. I told him to give me time till the next morning, and I would make up my mind. In the morning, after consultation, I concluded to offer him the copyright for the unexpired time (only one year) for two hundred copies.

After some demurring, we closed the bargain. I then thought and I still think it was not enough; but it was all I could get. In making up my mind the following considerations presented themselves: First, that the copyright would expire in one year, and he would then have the right to print it without consulting the author; second, that it would be somewhat mortifying to the author not to have his work republished, even if no great pecuniary benefit was to be obtained by such a republication; and it appeared to me to be quite certain that a new edition would not be soon printed, if I let this opportunity slip; third, I have been long anxious, as I presume you have been, to see the work gotten up in a better dress than it originally had, and in a way which will give it a general credit and more notoriety among all classes of the reading public than it has heretofore possessed—in fact, make it a standard work; fourth, it has given us a chance to give it a thorough correction, a thing which was very desirable. The work, you recollect, was got up in a great hurry, and a great many errors escaped our notice. You may also recollect that the Philadelphia reviewer spoke of the inaccuracies in the work. And he had reason enough for it. In looking over the work critically with a view of correction, I have been perfectly astonished at the errors that occur on almost every page. And although we understood perfectly what we meant to say, the reader would find it somewhat difficult to decipher our meaning. In the first 140 pages I made nearly 300 corrections. These are practically merely verbal alterations or change of phrases or sentences so as to make them more accurate or perspicuous. I have in no case so changed the text as to give it a different meaning. I flatter myself that it will now be more worthy the public patronage; and if for no other, this chance for correction I consider alone almost a sufficient remuneration for the brief limits of the copyright. I have also written a preface for the second edition, making quotations from American and European authorities in praise of the merits of the work. From delicacy I have written this as from the publisher. I think it is pretty well done. The work will probably be published in the course of about a month, and those designed for you will be delivered to me, when I shall send them to you. He guarantees not to sell in the state of Missouri, or the states south and west of that state. But that, of course, is all gammon. The book will be thrown into market, and he can not control the direction in which it will go."

PNEUMONIA.

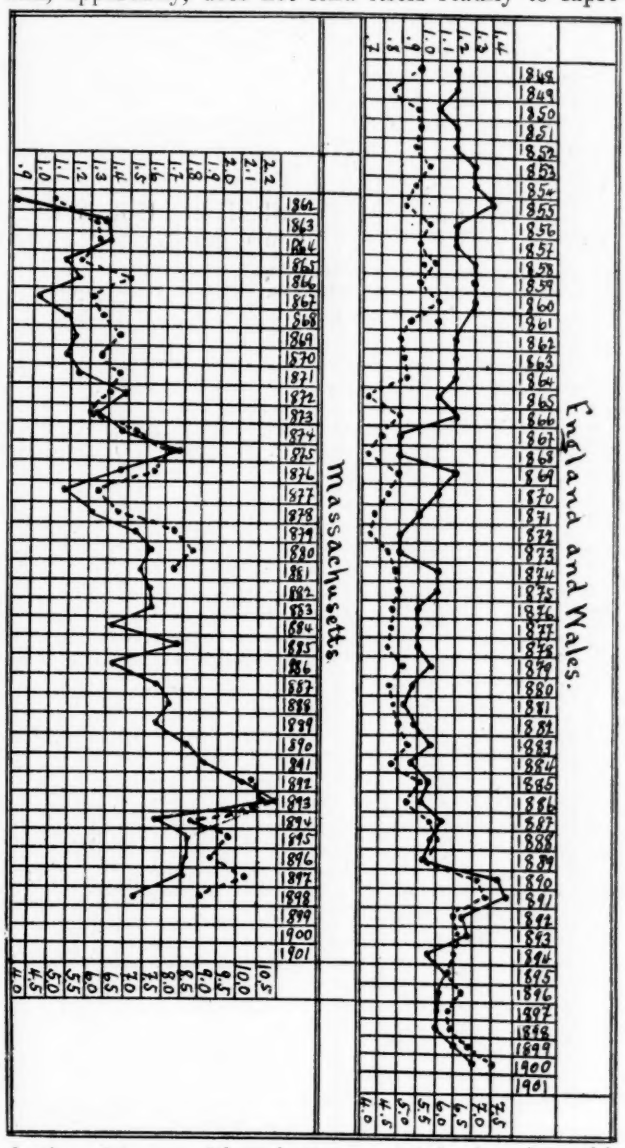
ITS FATALITY AND INCREASING PREVALENCE, WITH SUGGESTIONS FOR INDIVIDUAL AND COMMUNAL PROPHYLAXIS.*

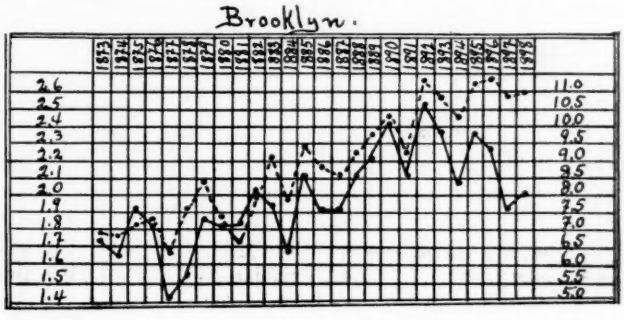
EDWARD F. WELLS, M.D.
CHICAGO.

Pneumonia has always attracted the earnest attention of physicians, from the times of Hippocrates and Galen to the present. Under its malign influence many illustrious persons have fallen, from Alexander the Great and Charlemagne to those of yesterday. It has appeared as local and widespread epidemics, and has always, in temperate regions especially, figured largely in mortality reports. It is, in many places, the greatest cause of death and its prevalence is notably increasing. Its cause is known, but definite and acceptable rules for prevention and treatment have not, as yet, been formulated. Taken as a whole it is the greatest medical problem of the day.

Pneumonia is an acute infectious disease, with definite symptoms and anatomic changes, due to the presence and exuberant growth of the pneumococcus in the pulmonary alveoli. It probably obtains entrance into the air cells of the lung from the upper respiratory passages, where it may be found, without producing any obvious deleterious effects, in a large proportion of healthy persons.

The pneumococcus is cultivated with some difficulty and, apparently, does not lend itself readily to saprophytic existence, although it is certainly found in this state. It has not been found, so far as I know, in the air, yet it is certain that the bacterium is received into the system through the inspired air. Whether it is



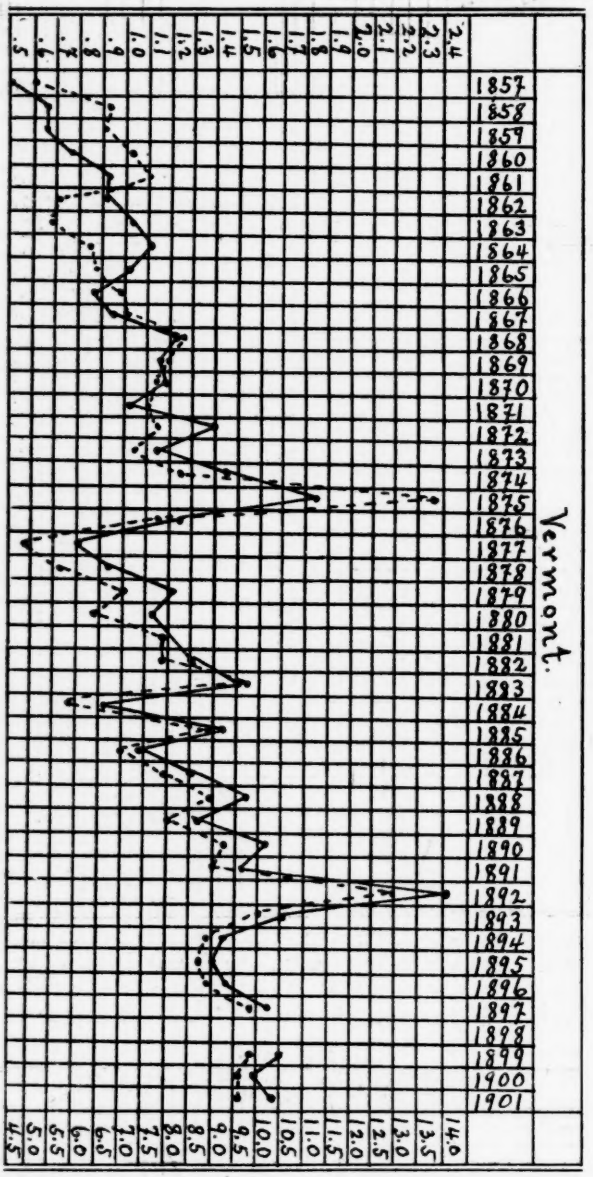


transported by the air in the form of dust from the dried and pulverized pneumococcus-laden secretions, or as a spray of such secretions thrown off by an infected person in coughing, hawking or sneezing is not known. but probably either is sufficient to convey the bacterium

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee: Drs. Arthur R. Reynolds, George Cook and Heman Spalding.

from one person to another. The various strains of pneumococci vary in their morphologic characteristics and especially in their virility, and the same strain may vary widely in these particulars as it is grown in different culture media or is passed through more or less congenial animal organisms. In its growth the bacterium produces certain toxins which are the chief causes of the symptoms of pneumonia and which, later, probably cause the death of the pneumococcus. It is not destroyed by most of the ordinary antiseptics and its capsule is only acted on by alkalies and ethers.

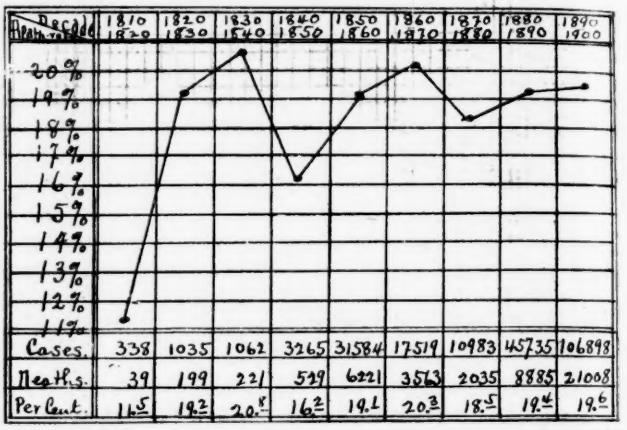
Whether pneumonia is increasing in fatality I am not



prepared to say. Previous to beginning the preparation of this paper my impression was that the malady is now more fatal than formerly, but since collating and analyzing a great mass of statistics bearing on this question I am not sure that a definite conclusion should be drawn along the lines of this impression.

In 1891 I published a table giving the mortality statistics of 223,730 cases of pneumonia, of which number 40,276, or 18.1 per cent., died. This table has been added to from time to time until it now embodies the results in 359,797 cases, of which 78,317 were fatal, equal to 21.8 per cent. This table embraces series of cases from all parts of the world and covers periods of time of nearly a century. A careful consideration of the material employed in constructing the table must lead to the conclusion that the death rate shown is probably underestimated—certainly not the contrary.

An analysis of the items composing the table shows that the death rate has remained, by decades during eighty years, nearly the same, as shown by the following curve and table:



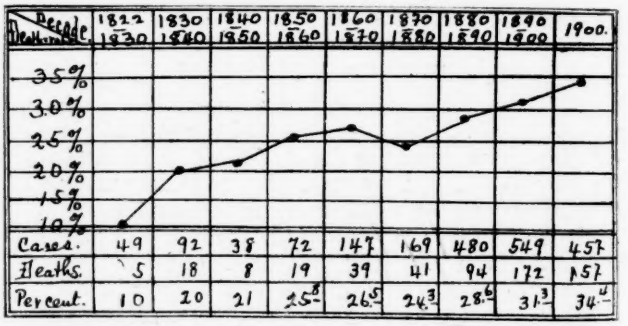
Cases.	338	1035	1062	3265	31584	17519	10983	45735	106898
Deaths.	39	199	221	529	6221	3563	2035	8885	21008
Per Cent.	11.5	19.2	20.8	16.2	19.1	20.3	18.5	19.4	19.6

Chart showing death-rate of pneumonia by decades.

Osler's[1] statistics of pneumonia in the Montreal General Hospital and the New Orleans Charity Hospital are in this line:

Montreal General Hospital.		Charity Hospital, N. Orleans.	
Years.	Death-Rate.	Years.	Death-Rate.
1853-1863....	16.2 Percent.	1830-1840....	44.6 Percent.
1863-1873....	16.1 Percent.	1840-1850....	35.3 Percent.
1873-1883....	23.7 Percent.	1850-1860....	32.2 Percent.
1883-1887....	20.3 Percent.	1860-1870....	43.9 Percent.
		1870-1880....	40.2 Percent.

It is true, however, that the statistics of some other hospitals, as, for example, those of the New York Hospital, the Boston City Hospital and the Massachusetts General Hospital, do not support this conclusion; nevertheless, I am of the opinion the curve drawn from the composite material approximates the truth.



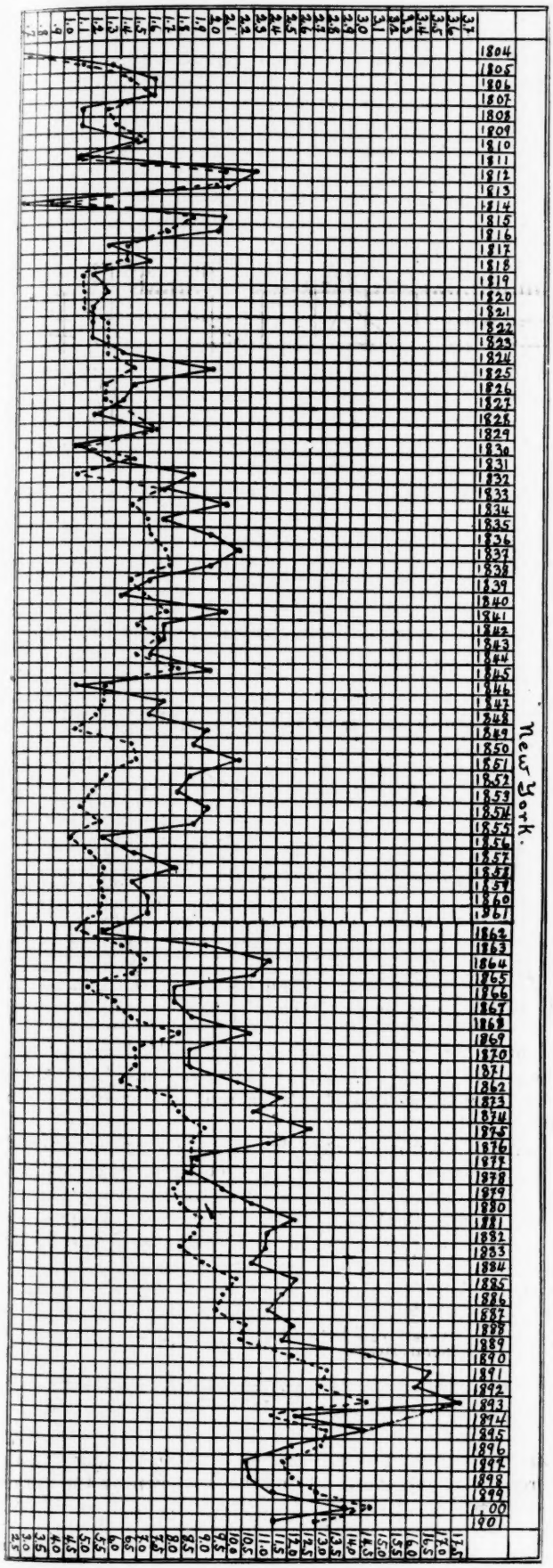
Cases.	49	92	38	72	147	169	480	549	457
Deaths.	5	18	8	19	39	41	94	172	157
Per cent.	10	20	21	25.8	26.5	24.3	28.6	31.3	34.4

Chart showing death-rate of pneumonia by decades in the Massachusetts General Hospital.

Although the death rate of pneumonia may not be materially greater than formerly, it is certain that the deaths from pneumonia, in proportion to the population and deaths from all causes, have very considerably increased during the past century, as shown by the curves in many localities, illustrated in the accompanying charts.

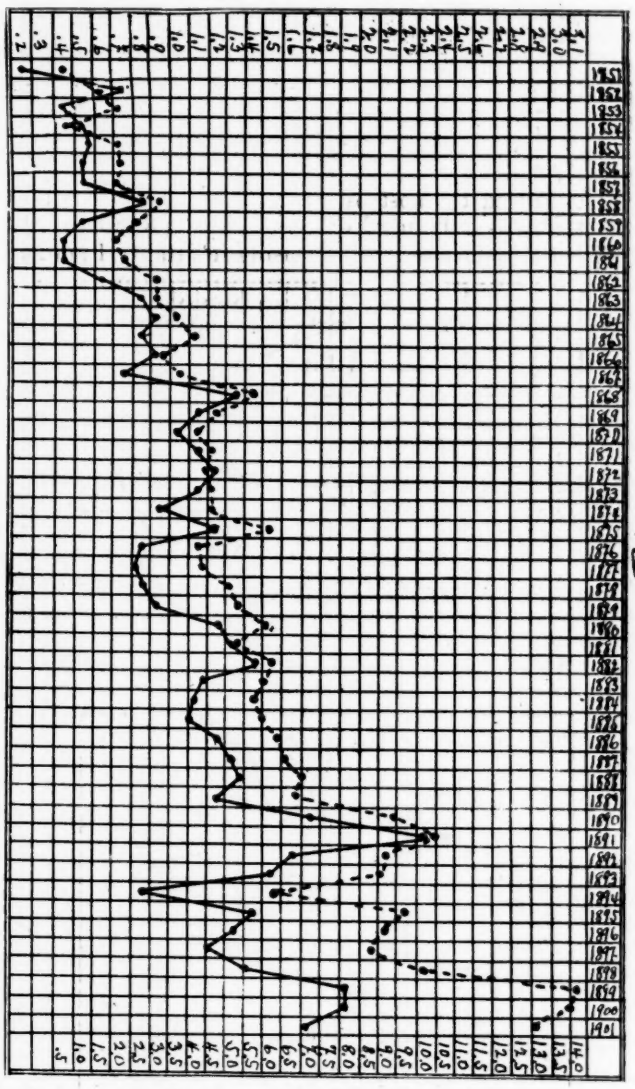
If, as has been shown, the proportion of deaths from pneumonia to the total deaths from all causes and to the population has steadily and markedly increased, while the death rate remains practically unaltered, the

1. See University Medical Magazine, November, 1888.

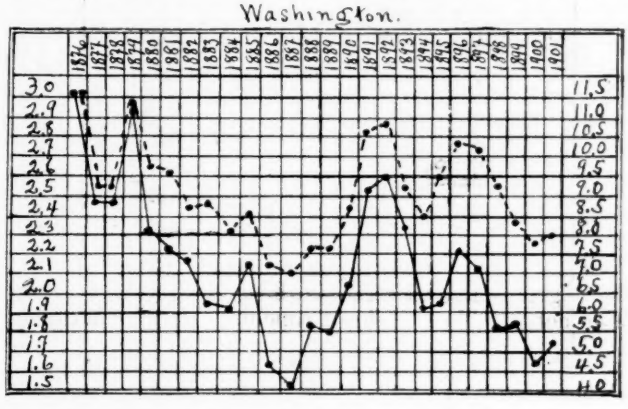


conclusion is irresistible that the prevalence of this malady has notably increased during the period of time covered by this inquiry.

Now to what influences may this increased prevalence be attributed? That it is due to any general deterioration of the resisting powers of the populace to morbid

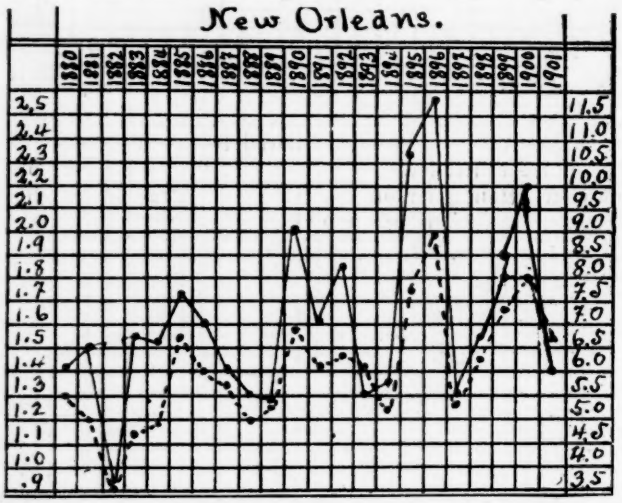


infections is disproved by the fact that the average duration of human life has been distinctly lengthened during these same years. It is likewise difficult to believe that there has been any general increased vulnerability to this particular bacterial infection. We are, therefore, driven to the inference that the pneumococcus

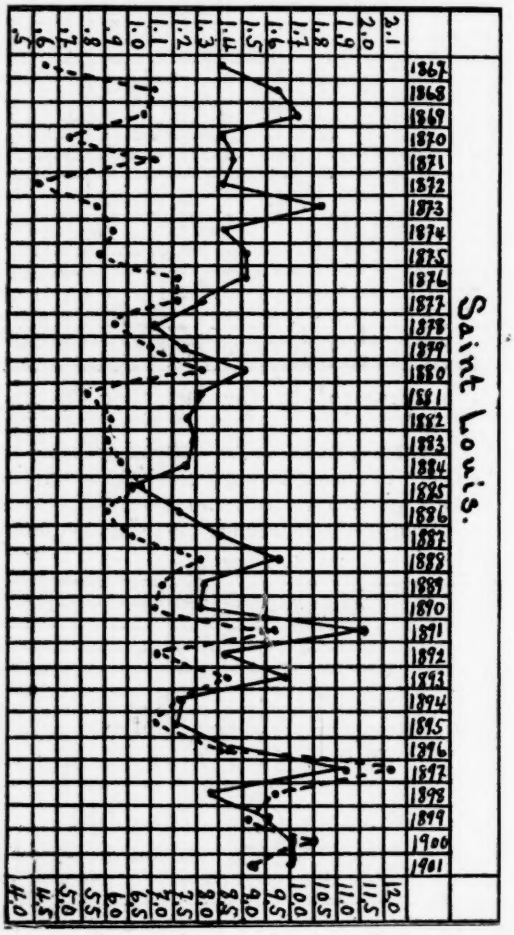


has become more prevalent, or that our opportunities for encountering the germ have been multiplied, or, more likely, that these are both operative in bringing

about the results mentioned. If the natural habitat of the pneumococcus is the upper respiratory passages of man, and if it here finds its best culture media, and if these pneumococcus-laden secretions are extruded in such manner that they find their way, as spray or



dust, into the respiratory passages of other unaffected persons, then the very general absolute and proportional increase of urban populations, the increased facilities for travel and the universal tendency for people everywhere, in city and in the country, to congre-



gate and mingle together, is clearly sufficient to account for much, if not the whole, of the increased prevalence of pneumonia.

Now, although this is a fair inference, yet we lack exact information on this point and a compilation of the existing pertinent knowledge, together with well-arranged and devised series of investigations along these lines will certainly prove of value and may open up most important avenues of prophylaxis.

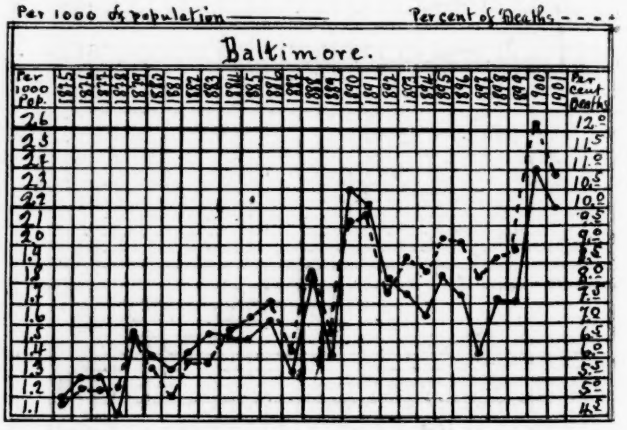
There is one contributory cause of pneumonia which, although not demonstrable, I believe to be operative and which deserves special mention; I refer to the weakening of the respiratory reflexes, especially during sleep, which follows chilling of the surface of the physically and mentally exhausted body.

CONCLUSIONS.

1. The fatality of pneumonia has increased but little if any during the past eighty years.

2. The prevalence of pneumonia has steadily increased during the past fifty years and during the past twenty years this increase has been very great.

3. For individual prophylaxis the nasal, pharyngeal and oral cavities should be kept as free as possible from accumulations of mucus, and when it has been demonstrated that such secretion contains the pneumococcus such efforts should be especially well directed and maintained. In addition, care should be taken not to become chilled when overtired. The individual should, as far as practicable, keep out of range of the extruded pneumococcus-laden secretions of infected individuals. The sputum and other secretions of the respiratory surfaces



of pneumonic patients, or of other infected individuals, should be destroyed before it has been allowed to become dry. Such persons should cough and sneeze into a moistened cloth.

4. For communal prophylaxis the information and advice above given should be kept before physicians, with the request that, if they can consistently do so, they give it as their instructions to their patients.

5. That there may be some comparatively simple means by which pneumonia may be prevented, but that the fundamental information on which prophylactic rules may be formulated is not yet at hand; therefore it should be the province and duty of public health officers to seek assidiously for such knowledge, and I would suggest that, as a preliminary step in this direction, pneumonia be placed on the list of notifiable diseases and that the environment of pneumonic patients be carefully noted and the results analyzed.

Antidote for Formaldehyd.—In view of the fact that this chemical is coming more and more into general use as a disinfectant and antiseptic, cases of poisoning from it will become more frequent. We have an easily-accessible and reliable antidote in ammonia water. It may be given in the form of ammonia water (a few drops well diluted) or the aromatic spirit or a solution of ammonium acetate.—*Merck's Archives.*

PNEUMONIA.

ITS INCIDENCE, MORTALITY, PROPHYLAXIS.*

JAMES J. WALSH, M.D., PH.D.
NEW YORK CITY.

The mortality from pneumonia is distinctly on the increase in all our large cities. This increase is taking place notwithstanding the fact that mortality from other infectious sources is decreasing. We hear much of diphtheria and smallpox. Their ravages are as naught to pneumonia. While the death rate from such important causes as heart disease, brain disease and consumption is on the wane, that of pneumonia is constantly on the increase. There is no doubt now that pneumonia is an infectious disease, yet notwithstanding the decrease in mortality in other infectious diseases, pneumonia is becoming a universally more serious danger.

INCREASE IN MORTALITY.

It is true that the pneumonia mortality is on the increase, especially among the old, and that the improved sanitary conditions in our cities have raised the age limit to a marked extent. The increase of persons living above 60 in our cities is not, however, as has been shown by the Chicago Department of Health, enough to explain the even greater increase of deaths from pneumonia at all ages. The survival of many delicate children who formerly perished in infancy also adds to the pneumonia death rate, but not enough to account for the present additional mortality. In a generation that has seen the mortality in our large cities cut in two and has been informed by the last census that the length of a generation has increased from about 31 to over 35 years, and that has seen the death rate from consumption so much lessened as to make us confident of eventually preventing the ravages of the "great white plague of the north," tuberculosis, pneumonia continues to be an ever more threatening factor. In the words of Professor Osler, pneumonia has now taken the place of tuberculosis in what Defoe described as "the Captain of the Men of Death."

These considerations of themselves are sufficient to justify us in treating the problem of the prevention, or at least the lessening, of pneumonia as the most important sanitary question before the present generation.

CONTAGION OF PNEUMONIA.

While it is well known and recognized that pneumonia is an infectious disease, the possibilities of its contagiousness are still in doubt. The best clinicians all over the world are agreed that it is. Among young soldiers in France and Germany, where patients are liable to be in a condition of low resistive vitality, living rather crowded together in old, unsanitary barracks, a number of concomitant cases of pneumonia have been reported each year for many years, that seem to be of the nature of an epidemic. In the wards of hospitals in many parts of the world the admittance of a case of pneumonia, even when this affection was not due to grippe, has been known to be followed by the occurrence of other cases among the patients in the same ward. At public schools a series of cases of pneumonia have been seen occurring under such circumstances as to lead to the thought that an epidemic of pneumonia was at work. One school last winter obtained an unenviable notoriety by having two series of pneumonia cases within its walls.

It would seem important, then, first of all to insure precautions against the spread of the disease by teaching the general public that there is always an element of contagion-danger in a pneumonia case, and that certain protective and prophylatic measures are at least eminently advisable in order to avoid all danger. The secretions of pneumonia patients should be thoroughly sterilized by heat or should be subjected to strong chemical antiseptics. The expectoration of pneumonia reeks with bacilli. It is often received into napkins or handkerchiefs, and must not be allowed to dry and find its way into the air, but must be carefully disposed of by those in attendance on the patient. Practically the same precautions as are now invariably instituted with regard to tuberculosis should be suggested for pneumonia.

Such directions will doubtless seem exaggeration of caution, not only to the general public, but to most medical men. Let us remember that the profession generally would have been quite as opposed to the suggestion of these precautions with regard to pulmonary tuberculosis twenty-five years ago. Now every one realizes that the old position in the matter was a serious mistake and founded on an erroneous opinion tenaciously held. The same thing may prove to be true of pneumonia.

DUST AS A CAUSE.

It is often assumed that pneumonia is almost exclusively a disease of cold weather. Because, like other infectious fevers, it usually starts with a chill, it is often thought to be due to that charity mantle in etiology, the catching of a cold. As it affects the respiratory region this idea of a cold in its etiology is confirmed. It is well known, however, that pneumonia is by no means limited to very cold weather, but, on the contrary, may occur at any season of the year, when the conditions for its development are present. It is most frequent in the spring and the fall. Very cold weather is not the time when pneumonia is apt to be prevalent. It occurs particularly after a series of days without sunlight. This is usually damp weather, and the dampness is supposed to favor the taking of colds—hence the pneumonia. As a matter of fact, however, it would seem that the absence of sunlight and the presence of moisture favors the growth and multiplication of many micro-organisms, and among them especially the pneumonia pneumococcus.

It is well known that this micro-organism occurs in the throats even of healthy individuals. It seems, probably, however, that when there are large numbers present the risk of a pulmonary affection is greatly increased. Micro-organisms do not grow apart from the presence of organic material. The occurrence of street dirt rich in organic material, as is true of city streets, constitutes an especially favorable culture medium. We do not know that the pneumococcus would grow thus as a saprophyte, but there is reason to suspect it from its universal occurrence. In the absence of sunlight germs grow luxuriantly, and consequently the special tendencies to the occurrence of pneumonia in the spring and fall.

PROPHYLAXIS AND CLEAN STREETS.

At other seasons of the year it would seem that dust constitutes one of the disturbing agents for such germs. It is well known that windy days are apt to be followed by a series of pneumonia cases. It has usually been said under these circumstances that the irritation of the respiratory tract by the cold air which found its way in, was the prime factor in the production of pneumonia. Windy days, however, in which the wind is not

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee: Drs. Arthur R. Reynolds, George Cook and Heman Spalding.

necessarily cold, has been known to give rise to an increased incidence of penumonia.

The question of clean streets, then, would seem to be an extremely important basic principle in the general prophylaxis of pneumonia. The street-cleaning commission of our large cities is in this matter the sanitary bureau of first importance. A time will probably come when the city sanitary engineer will consider it quite as objectionable, or even more undesirable on the score of public health, to have dusty streets as to have malodorous drains and other such presumably serious unhealthy conditions.

INFECTION IN CROWDED ASSEMBLIES.

There are other forms of dust inhalation to which special attention will have to be given. The history of many cases of pneumonia have as one of their features the presence of the patient in a crowded hall, theater, church or some numerous assemblage within a few days before the development of the affection. The germs of the disease evidently get into the air in such places with more frequency than under other conditions and are taken up by the respiratory mucous membrane. In normally healthy individuals they fail to develop. In those, however, who are run down from overwork, or worry, or some serious pathologic condition, or whose vital resistance is lowered by old age, or some already existent respiratory affection, the germs of pneumonia find a favorable soil for luxuriant growth.

The conditions under which patients enter and leave such assemblies are especially favorable for the bacteria to obtain a foothold in the tissues. Not infrequently in colder weather, the mucous membranes are blanched by contact with the cold outer air, and while in this anemic condition become covered with whatever germs may be clinging to the dust particles of the room. Before the normal reaction occurs that restores the usual amount of blood to the respiratory mucous membrane, some of the germs may easily have secured a lurking place beneath the outer layer of cells. After the exposure to the germ-laden atmosphere on the exit from the theater or other meeting place the cold air is once more encountered and the circulation in the respiratory mucous membrane is once more interfered with by the contraction of the peripheral vessels and the consequent blanching of the tissues that takes place.

It is evident, then, that these meeting places must have special attention from boards of health if the dangers involved in the breathing of a dust-laden atmosphere in which many organic particles find a place, are to be avoided. Unfortunately theaters, because of economic conditions in our large cities, are so built that they are entirely beyond the cleansing bactericidal influence of direct sunlight. The result of this is that they may very easily become ideally favorable breeding places for many forms of germs and are undoubtedly the source of many of the colds and also of the pneumonias of the winter time. Churches are prone to be rather dark structures also, and though the sunlight has more chance to purify the air, its presence is not encouraged to any great extent.

It seems not improbable, therefore, that in the future regulations may have to be made requiring the arrangement of meeting places in such a way that they can be subjected for several hours each day to the influence of direct sunlight. Not only this, but it is probable that the present custom of heavy upholstery and thick, permanently-laid carpets will have to be discouraged. On the other hand, well-polished hardwood floors and readily removable rugs and mattings are ideally sanitary for such places. The floors will have to be of a kind that can readily be cleansed without the necessity of raising too much dust, and whatever dusting is done will have to be finished many hours before the crowd is to assemble.

Such regulations may seem far-fetchedly theoretic and perhaps unjustified by present conditions. The physician who announced twenty-five years ago that the spitting nuisance in public places would have to be regulated by law, would surely have been laughed at, as suggesting a Utopian idea, rather esthetic than sanitary. The present increase from mortality by pneumonia in our large cities justifies the taking of the most serious precautions. It is along the lines of thought suggested by the questions of the association of dirt and dust with pneumonia that the most hopeful prospects of prophylaxis and improvement of present conditions seem possible. Crowded centers are more liable to pneumonia because of the fact that the secretions of human beings are in themselves dangerous and their accumulation, even in impalpable dust, may prove a source of very serious danger.

GAS LEAKAGE AND DEFECTIVE DRAINAGE.

There seems to be no doubt on the part of many clinicians and sanitary authorities that defective house drainage forms one of the most prominent sources of predisposition to pneumonia. The statistics of the workmen in the Paris and London sewers and of the small army of men employed on the sewage farms of Berlin do not show any special prevalence of the disease. It seems probable, then, that general sewage, with its large abundance of watery elements holding most of the gaseous constituents present in solution, is not particularly dangerous. The more concentrated sewage of house and the leakage into house drains of various irritating ingredients from house illuminating gas would seem to be the worst etiologic factor.

It is a matter of record now that millions of feet of illuminating gas escape beneath the pavements of our cities each year. In the residence district pavements are apt to be of asphalt and so hermetically seal the gas in the soil. Its only mode of exit, then, is through the walls of houses and into branch sewers, from which it finds its way easily into living rooms. This irritant material keeps the lungs in a low state of congestion rather favorable to the growth of the pneumococcus should it once obtain an entrance into the lungs. It seems probable that sanitary authorities will have to take account of the gas leakage in their attempt to lessen the incidence and mortality from pneumonia.

DISCUSSION

ON PAPERS OF DRS. WELLS AND WALSH.

DR. N. S. DAVIS, JR., Chicago—The conclusion Dr. Wells has arrived at is particularly interesting—and it seems perfectly justified by the figures which he quotes—that the mortality from pneumonia is not increasing. I think the opinion of the profession has been—as certainly my own has been—that it was increasing. One thing to bear in mind, however, is that the statistics before 1830 are of comparatively little use, because until a method of differentiating between pneumonia and a number of other diseases, especially pleurisy, was shown by Laennec and generally understood, proper records could not be kept. Moreover, it was not until near the middle of the century that reliable statistics began to be gathered by public officials. The statistics of Dr. Wells between 1835 and 1855 will probably be found, if closely examined, to contain an over-statement of the mortality from pneumonia. As a consequence a more abrupt descent of the line of mortality than is represented on these charts would be correct. On the other

hand, mortality from pneumonia is more frequently recognized by physicians than formerly. Many cases were overlooked—especially cases that occurred in old age and that followed injuries and surgical operations. All these are now included and tend to increase the death-rate in the more recent returns over those of the earlier years. It is possible, therefore, that if we had more accurate information, which it seems impossible to get now, it would be found that this line of increase is exaggerated.

There is little to add in regard to prophylaxis. The subject is one of extreme importance, and one we ought to talk about, not only in the profession, but among laymen with a view of inducing them to adopt prophylactic measures. I believe with Dr. Walsh that, not only for the purpose of lessening the mortality from pneumonia, but decreasing other diseases as well, the greatest care should be taken in regard to the sanitary condition of places and vehicles where large numbers of people are wont to be gathered together. This is particularly necessary in regard to street cars which are badly ventilated, often very foul and very crowded; no places are more apt to become centers for the spread of infectious diseases.

Dr. George M. Kober, Washington—My impression, gathered from studying the official census statistics, is that there is a decided increase in the mortality from this disease within the registration area, and this is all the more surprising as there has been a marked decrease in the death-rate from consumption and all other infectious diseases and the span of life since 1890 has been lengthened about five years. The probable causes of the increased prevalence of pneumonia and its greater fatality have been well stated by previous speakers. One fact worthy of consideration is whether the increasing quantity of alcohol consumed in this country, amounting to over 17 gallons per capita, may not be a predisposing factor. An analysis of the mortality statistics shows that there is an increase in diseases of the heart, liver and kidneys and dropsies. These are diseases influenced by the undue consumption of alcohol, and in regard to pneumonia those who have had experience know that alcoholic subjects are exceedingly unpromising cases for treatment and usually succumb to the disease. This would seem to bear out the idea that alcohol is a predisposing factor in its production. But whatever the cause for the undue prevalence of pneumonia may be, greater effort to prevent the spread of the disease should be made by scientific disinfection and the adoption of general and individual prophylactic measures.

Dr. A. Robin, Newark, Del.—In examining sputum at the Delaware State Board of Health Laboratory, I have frequently observed pneumococci in normal sputum. The pneumococci, when isolated in two or three instances, proved pathogenic to rabbits. This fact shows that the human being enjoys a natural immunity from pneumonia, except when that immunity is reduced by exposure or disease. I incline to agree with the view expressed by the Chairman (Dr. A. R. Reynolds) in one of the bulletins of the Chicago Board of Health concerning the relation of grippe to pneumonia. It is possible that influenza reduces the vitality of the organism, rendering it more susceptible to pneumonia, or the pneumococcus is rendered more virulent by a symbiosis with the bacillus of influenza. Another point I would call attention to is that many patients who die from pneumonia die from toxemia rather than consolidation, the latter in itself not being sufficient to cause death. A case has come under my notice in which a patient, a robust and previously healthy woman, contracted pneumonia after an attack of grippe, and succumbed on the fourth day of the disease, or long before consolidation was far advanced. In these cases the respiratory difficulties are due to a paralysis of the respiratory centers.

Dr. H. M. Bracken, Minneapolis—Dr. Walsh has given us statistics in regard to the cities. It may be well to add something about the country districts. I regret that I have so little data to offer, but I have had occasion to note the statistics for Minnesota. This state has in the past had a small number of cases of pneumonia as compared with eastern states, but about a year and a half ago I noticed that the deaths from this cause appeared to be on the increase. I wrote and spoke on the subject to physicians in the small villages and rural districts of the state, and the general opinion expressed was that there had been more pneumonia of late than formerly. The rate of mortality, it is also agreed, had been much higher than previously.

Dr. Wells—I have very little to add except to dwell for a moment on the question brought up by Dr. Davis as to diagnosis and its bearing on the accuracy of my statistics. In gathering the statistics from England and Wales for the early days of the past century I was particularly careful in the conclusions I drew. I always compared the mortality from pneumonia with that from other diseases of the respiratory tract with which it might be confused. I noted as far as possible the symptoms described and in this connection I may allude to the work of Dr. Cleghorn on the island of Minorca, in 1744 and 1745. He has given us a description of pneumonia which is, in some respects, well up to that given in most of the advanced text-books of to-day. The same is true of the descriptions given by Cullen, Brown and others, and in fact studying the literature on the subject one is forced to the conclusion that, comparatively speaking, pneumonia was as easily recognized in days past as it is now. My observation is that even in these days a pretty large proportion of physicians make a diagnosis on symptoms that might have been recognized as well years ago as now. Personally, I am of opinion that the diagnosis of pneumonia, for statistical purposes, was fairly accurate in the earlier years of the last century, and that the figures I have quoted may therefore be relied on as showing the actual increase in the disease. The prevalence of influenza no doubt accounts for the great increase that has taken place in the last ten years; but the general increases have been going on gradually for a much longer period, thus showing that there must be some other factor at work.

VENESECTION.*

H. B. FAVILL, M.D.
CHICAGO.

I will not apologize for occupying your attention with a topic to which I am able to bring neither new facts nor satisfactory conclusions. My excuse is the importance of the subject.

You will agree with me, first, that there has been during the last few years a tendency to place a greater value on bleeding; second, that the indications for its use are vague and indefinite as now defined in the literature, and you may agree, third, that it is of the utmost importance that this procedure of recognized value be not again discredited by indiscriminate employment in obviously inappropriate conditions.

Nowhere can one glean a more instructive lesson than in following the steps of Trousseau as he slowly drew away from the then dominant views as to venesection, sifting out with his rare judgment the real from the apparent and finally taking a stand that was quite out of harmony with his contemporaries. It is noteworthy, however, that his reservations as to the value of bleeding were in general centered on two aspects of the subject: the antiphlogistic, which he did not subscribe to, and the purely mechanical, as, for instance, the value of bleeding to check or remove cerebral hemorrhage, which he likewise discredited. Both of these reservations he fortified by convincing experience, not only as to non-efficacy, but with a positive opinion that patients so treated progressed less favorably than others. It is not likely that on these aspects of the matter his judgment will be found faulty. At that time, however, there was hardly considered the specific relation of the blood vessel contents and the inadequate heart.

Time has developed a view that there is a condition liable to occur in which there is, for various reasons, an

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

incapacity of the heart to dispose of the blood which it is called on to circulate. It is not my purpose to discuss that. At this time we are obliged to accept it as a working hypothesis.

The point of importance then is: what are the various conditions under which this heart inadequacy may develop, and out of that inquiry, what of these are in any degree amenable to correction by the withdrawal of blood? In many cases of respiratory embarrassment in which asphyxia is threatened, it is difficult to form a judgment as to the most important factor in the embarrassment, inasmuch as cardiac labor is associated with toxic neurovascular conditions impossible to disentangle. Occasionally one will encounter a situation that seems reasonably plain.

CASE 1.—A man, 72 years of age, robust, sturdy and of sound organs, so far as careful clinical observation by myself during several years past could determine. Living in the suburbs, having a cold, came to town without an overcoat, took a Turkish bath and went home chilled. At once became "stuffed up" and rapidly grew worse, until in the course of six hours I saw him in consultation in the following condition:

Cyanotic breathing approaching stertorous, very restless, but almost comatose, breathing slowly and noisily. Lungs filled with râles, distributed universally. Heart sounds inaudible, partly because of pulmonary noise. Heart dulness decidedly increased, pulse feeble, irregular and almost vanishing. My statement was: "He can not live two hours." I obtained permission to bleed; withdrew 950 c.c. of blood. As it flowed the patient grew quieter. Pulse returned, consciousness returned, turning on his side slept two hours, constantly improved in his respiration and recovered. At this date he is exceptionally sound for a man of that age.

I cite this because it marks a type. Having a set of conditions, due to accidental circumstances, which conditions I interpret to be intense pulmonary engorgement, with right heart distension, in an individual whose organs are essentially sound and an exciting cause, transitory in character, there can be little question that, first, in such conditions blood letting is indicated; second, that its action is strictly mechanical, removing the immediate over-distension, so paralyzing to any hollow viscus.

To this exact type few cases conform, for either the organic conditions are originally degenerate or the exciting causes are not transient, being much more likely to be infectious. A judgment as to the degree of approach to these conditions is important as a basis for an opinion as to the probable good to be accomplished by bleeding. Unquestionably organs not too degenerated may be successfully relieved, and that even in the presence of continuing and augmenting excitants. But generally speaking, the non-febrile, or perhaps toxic as against infectious conditions will offer more opportunities for useful interference.

Despite the fact, however, that these optimum conditions are unusual, their rarity has more relation to prognosis than to therapeutic indications, for, beyond doubt, there are conditions demanding relief by these means which have little in common with the case cited, yet in which the immediate danger is cessation of the pulmonary circulation.

CASE 2.—A man of 54 years, very large, strong and of previous bad habits, whose recent history, though not the subject of medical investigation, should be interpreted as that of dilating heart, presumably with marked degeneration.

He was found with great dyspnea, somewhat cyanotic, capillary circulation very bad, pulse rapid and feeble. Eight hundred c.c. of blood withdrawn produced at once relief to breathing and general distress and a considerable improvement in venous and capillary stasis, but no material improvement of pulse and with no considerable response to a repeated venesection nor other treatment. Patient died after a period of two days.

This case serves to mark the contrast between two individuals whose essential difference was the condition of heart muscle. The one who died relatively young, exceptionally strong, plethoric and far less obviously embarrassed. The one who survived, old, relatively far less strong, and not plethoric, and at the time of treatment, with dissolution impending. It seems to me plain that, from the mechanical side, the condition of the heart muscle rather than the intensity of the provoking cause will determine the issue.

With regard to exciting factors in these conditions, one can know but little. "Taking cold" is an obvious enough fact, but quite inexplicable. That it is a mixed result of toxic influence and neurotic response seems likely, and its varieties will show the preponderance of the neurotic factor at one time and the toxic or infectious factor at another. This view is illustrated by cases which occur under circumstances which do not seem to be causally adequate.

CASE 3.—A woman, 38 years of age, was brought into the hospital giving a history of several days' sickness. Her condition on entrance was that of exaggerated dyspnea, pronounced cyanosis and the following physical findings: Respiration audible over the whole of both lungs, showing no signs of consolidation, but with the most extreme development of moist râles which I have ever heard. Expectoration reasonably free, watery, but not bloody. Pulse 130, with considerable volume, but irregular. Area of heart dulness decidedly increased to the right, but heart tones not appreciably altered.

The patient, being in terrible distress and with increasing cyanosis, was bled 600 c.c., she being rather a delicate type of woman. The symptomatic relief was immediate, the breathing becoming easier, the distress abated and some sleep followed. For the time the pulse was markedly improved, both as to regularity and rate. The pulmonary conditions, however, did not change so far as I could see, and the patient went on, and in the course of two days died, without, however, a recurrence of the intense dyspnea. There was, during the course of this attack, no rise of temperature. The cause of this attack was quite beyond my discovery, inasmuch as the general clinical findings were negative. That weakness of the heart itself was not the precedent cause is rendered probable by the history of previous perfect health.

It leads one to suppose that some acute toxic or possibly infective element was present and persistent. It indicates in a way the hopelessness of venesection in the presence of a persistent exciting cause. This case I would distinguish as not of the class of angioneurotic edema, of which I have seen a few. That there may have been, however, some deep analogous toxemia is quite possible. In the three cases cited symptomatic relief was afforded by the withdrawal of comparatively large quantities of blood. All the circumstances warrant the belief that mechanical obstruction and over-powering of the right heart formed the essential difficulty. The question arises whether the overpowering of the right heart is necessarily mechanical.

CASE 4.—A man, 60 years of age, robust, of reasonably good physique, and on recent observation pronounced sound. He was taken with pneumonia, in a typical way, developed immediately intense pain, and in the course of twenty hours profuse watery bloody expectoration, not rusty nor prune juice, but bright red. The intensity of this feature was very noticeable. On the third day, while signs of hepatization were not clear, the heart appeared to become markedly embarrassed. It became extremely arhythmic, feeble and rapid.

The suspicion was inevitable that, in spite of the previous opinion based on recent examination by myself as to the sound-

ness of the heart, the heart muscle was badly degenerated. It had all the behavior of an exhausted heart.

Although there was some divergence of opinion among the attendants, most of whom thought that the behavior was an evidence of intense toxemia, it was nevertheless agreed to bleed, on the hypothesis that the weakened muscle needed relief in any event. Venesection was made and the relief to the symptoms was noticeable from the very beginning of the flow. So very marked was this that when the flow was obstructed somewhat obstinately after 300 c.c. had been withdrawn, it was deemed advisable to let the matter rest at that point, inasmuch as a fresh venesection could be made at any moment. The heart became regular, the volume fair and the pain and dyspnea distinctly less. The relief in this matter was not very prolonged, however, and subsequent venesections were done with the same relief each time, the case passing on at the end of a week, however, fatally.

Throughout this experience, with the brief intervals represented by the periods of relief from bleeding, the heart of this man seemed absolutely untrustworthy, basing the judgment on the character of the pulse. On the other hand, with heart tones reasonably satisfactory, there was maintained an unusual excretion of urine, and in the early history of exceedingly good quality.

It is clear that the cardiac inadequacy could not have been as great as appeared. It was, however, a matter of great surprise at the autopsy to find that the gross appearance of the heart was rather noticeably normal. Not only was the color and texture of the muscle good, but unusually firm and of normal thickness. The microscopic showings indicated certainly no greater fibroid change than is usual at that age, so that the summing up of the heart condition must be considered as very far from degenerated.

Two facts are noticeable: the bad action of the heart at the outset of the infection when the minimum of lung was involved, and second, the marked improvement of heart action under the withdrawal of a minimum quantity of blood, 300 c.c.

This case raises the questions, first, to what extent heart embarrassment may be toxic rather than mechanical. Second, to what extent under such intoxication, otherwise minor embarrassments may become important. Third, whether there is some complicating or intermediate factor operating through the nerve centers which indirectly affects the heart capacity.

I am aware that this is more or less fruitless speculation, yet I would call attention to two facts among many which possibly bear on it. First, the fact that the same symptomatic relief as to the pain and dyspnea sometimes follows leeching and cupping which manifestly is not immediate relief to the right heart. Second, that conditions purely neurotic, such as tetany, are by old writers considered as susceptible of symptomatic relief by bleeding.

I am unable to put these reflections into any more tangible form, but the question is always in my mind, to what extent an indirect influence is involved in this question of bleeding.

I omit detail of a number of venesections in more ordinary conditions, namely, advanced pneumonia and cardiac embarrassment, all terminating fatally. The preceding cases are all unusual in some respect. The point interesting to me is, from these as a text, do we gain any idea as to indications? The fact of fatal issue does not at all bear on the case, for in the nature of things the majority of patients so treated will die. What we want is a method of reasoning that will reduce the useless bleedings to a minimum and still ensure the relief where bleeding would serve a useful purpose. Let us postulate, then, that whenever we encounter great pulmonary embarrassment due to vascular engorgement, bleeding is suggested. What are the determining considerations? Ought we not to ask, first: is the engorgement irritant, that is, toxic, or is it due to stasis? The conditions at the outset of pneumonia are irritant, at the close due to stasis, that is, paralytic. If we bleed early, it is as a prophylatic; essentially as an antiphlogistic measure, but with an eye to the heart struggle later. If we bleed late, it is to assuage the struggle already taking place.

The experience in Case No. 4, pneumonia with bad heart action from the first, relieved repeatedly by small bleedings, raises the question whether there are not conditions in which repeated small bleedings are useful. Certainly neither primary nor terminal bleeding has given much encouragement thus far. Ought we not to ask, second: is the toxic cause to be considered as transient or increasing?

In response to the query: "Which will be classed as increasing?" If we reply: "Pneumonia and other acute infections," it will tend to rule out venesection as a rule, providing we feel that a progressive cause is a bar to its usefulness.

Unless we believe in real antiphlogistic effects, which I fancy we do not, free early bleeding seems to me to be of doubtful utility. The rare condition of extreme plethora might justify it, but plethora is not, as a rule, intravascular excess, but the blood tension is in part a general condition which is likely to be speedily reproduced from the tissue conditions, and, on the other hand, the cardiac exhaustions are not at all confined to the plethoric, but bear close relation to the toxemia and vital resistance.

If it can be assumed that the toxic or excitant cause is not progressive, at once we reach the third question: what is the condition of the heart muscle? Instances where it is good and known to be good, as in Case 1, are rare, but furnish a clear indication. Cases where it is unknown but presumably bad, as in Case 2, furnish a doubtful justification. Conditions that are reasonably to be considered as not degenerate, as in Case 3, the woman with edema and no general lesion, furnish good indication.

However, most of the instances of acute right heart embarrassment occur in individuals whose cardiovascular conditions are chronically deteriorating. The indication is clear enough where suffocation is threatened but the prognosis is bad.

Time will not permit me to go farther into detail. There always arises the question, will it do harm to bleed? The answer is, rarely, under conditions that at this day would be at all considered. Even the theoretical contraindications of some authors I believe to be largely fanciful, and the few instances of disaster that followed letting of even a very small amount of blood may be disregarded. In spite of the fact, however, I believe that we should move in the matter with the utmost discrimination; not so much that we may endanger the individuals, but lest we discredit a therapeutic measure that is slowly advancing to its true status.

DISCUSSION.

DR. CHARLES G. STOCKTON, Buffalo—I have been very much gratified to find that Dr. Favill takes the view regarding blood-letting that my experience has led me to hold. My experience with blood-letting has been somewhat similar to Dr. Favill's, as shown in his description of Case 4. Like him, I have had in suitable cases good results by withdrawing large amounts of blood; I have more often seen great benefit for a short time follow the withdrawal of small quantities of blood, repeatedly done; I have saved life by this measure. I have gone into detail regarding this measure in an article published last Decem-

ber in the *Medical News*, entitled "The Treatment of Pneumonia." My experience with the withdrawal of blood in pneumonia shows that it will not only benefit the patient's symptoms but also the physical condition of the lungs as shown by the physical signs. I do not pretend to be able to explain what reaction follows this procedure, but I maintain that when the lung is in a state of congestion and we allow a moderate amount of blood to leave the body there will be an almost invariable cessation of the advancing consolidation for a considerable period. I do not mean to say that it cuts short the course of the disease; it apparently delays consolidation. If one studies the physical signs over a particular region of the lobe he will find that consolidation does not go on to maturity, and that the breathing is better for a period of twelve to eighteen hours after the withdrawal of blood; but subsequently consolidation will occur. Any measure that delays consolidation on the fifth, sixth or seventh day of a pneumonia is a valuable one and may save lives. I think that if we can delay the consolidation and, at the same time, relieve symptoms by the withdrawal of blood we should do so. In my experience the withdrawal of from 200 to 300 c.c. is productive of as much good as the withdrawal of 500, 600 or 700 c.c. There is but little danger in the withdrawing of small amounts. Without being able to explain it, I feel convinced that the good which follows this procedure in certain cases is undoubted.

DR. T. B. GREENLEY, Meadow Lawn, Ky.—In severe cases of pneumonia, in olden times, when patients would be suffering with pain in side, difficult breathing, with rapid pulse and high temperature, the withdrawing of 15 or 20 ounces of blood would greatly modify these symptoms, rendering the patient much more comfortable. In those days the mortality did not exceed more than 10 per cent., but now fully 20 or 25 per cent. die. I think, in many cases of this disease, the restoration of the lost art would prove beneficial. I observed in the mortality reports in the city of Louisville last winter more cases of pneumonia died than those from tuberculosis.

BLOOD-LETTING AND BLISTERING IN THE TREATMENT OF PNEUMONIA.*

JAMES TYSON, M.D.
PHILADELPHIA.

There are two periods in the course of a croupous pneumonia in which blood-letting may be of service; first, in the early stage for the relief of pain and dyspnea, and second, in an advanced stage where there is engorgement of the right heart, also associated with intense dyspnea and general venous stasis.

No remedy is so efficient for the first object as blood-letting by the application of cut cups. Poultices, counter-irritation by the various measures commonly employed and even full doses of morphin hypodermically, are comparatively valueless as compared with wet cupping. Full doses of morphin produce temporary relief, but it passes away as soon as the effect of the drug wears off. No one who has not seen the happy result of such a bleeding can realize it. Venesection at the arm is less efficient, although it, too, relieves engorgement and diminishes pain and dyspnea. By no means every case of pneumonia, however, demands such treatment, and it is especially the cases associated with pleurisy—pleuropneumonia—in which it is indicated and is of such signal service.

The second period in which blood-letting is of service in pneumonia is, as stated, the advanced stage, where there is engorgement of the right heart, which is unable to unload itself of its burden, because the lung is already gorged with blood which it in turn can not get rid of.

The symptoms of this condition are an intense dyspnea, the breathing rate being often 50 and more, the breathing itself labored and shallow, the lips and face and even the general cutaneous surface dusky, and the pulse frequent and its volume feeble. No situation is more exacting of good judgment and decision than that described. Many physicians do not arise to the occasion and allow their patients to perish. I am afraid there have been occasions in which I have been wanting. Some of the failures to take advantage of opportunity may be due to the modern fear of blood-letting, which is as exaggerated as was its abuse seventy-five years ago. With our present conservatism as to blood-letting it is scarcely possibly to do harm, and some opportunities to do much good are lost.

Blood-letting under these circumstances, and when I say blood-letting I mean general blood-letting, or venesection, is more efficient when associated with hypodermoclysis of normal salt solution and with oxygen inhalation. Hypodermoclysis alone, although of recognized value in cases of collapse from hemorrhage and after various surgical operations, can not be expected to be of advantage in such a state of pulmonary engorgement as that described. Indeed, I regard it as harmful because it must tend to overload the right heart, increase its embarrassment and possibly stop its action. After a blood-letting, however, the absorption of the fluid infused is more rapidly carried on, the toxins are diluted and eliminated in the urine and sweat, and in favorable cases the pulse improves and its rate diminishes, while the breathing becomes deeper, less frequent and less labored. I fear the accident referred to occurred in one case in my own practice, not a case of pneumonia, but of Bright's disease. The indication of mischief is sharp accentuation of the pulmonic sound.

The simultaneous inhalation of oxygen is an undoubted comfort to the patient, whatever be its influence toward cure of the disease. The lips become brighter red and the breathing becomes deeper and less labored. Dr. Clement B. Penrose, Baltimore, who has especially called attention to the combination of these three methods of treatment, says the patient is rendered much more susceptible to the influence of oxygen by the hypodermoclysis, especially if the oxygen be passed through a wash-bottle containing hot water to which has been added a teaspoonful of mixture of creasote and turpentine, each one part, and compound tincture of benzoin two parts. Dr. Penrose has also added a funnel to the oxygen apparatus, so arranged that the patient may inspire from it instead of through the tube introduced into the nostril.

These include the conditions in which I believe blood-letting may be found of service in the treatment of pneumonia. I do not claim that they are frequent in occurrence, but that they do occur I am confident, and believe also that by bleeding thus employed much suffering may be averted and a few lives saved.

As to blistering in the treatment of pneumonia, it is of limited advantage. It may be of service in connection with delayed resolution which is not due to a tubercular pneumonia. In the acute stages of pneumonia it is of no value.

DISCUSSION.

DR. EDWARD F. WELLS, Chicago—I would have liked to have heard more stress laid on the reasons for venesection, over and above those given by the lecturer. When the toxin of the pneumococcus was first brought to the notice of the profession, we became acquainted with its most poisonous effects; it causes a profound chill, a rapidly developing fever, and paresis of the capillary circulation. It would seem at this point that

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

danger is most likely to creep in; the system may be overwhelmed by the intoxicant. The quantity of toxin in the blood may be the reason for resorting to venesection in the stage of hyperemia. It would seem reasonable to think that the greater the amount of lung involved, the more active would be the pneumococcus and the greater the quantity of toxin would be thrown into the circulation, and the more severe the symptoms would be. But this is not always the case. It seems as if a tolerance is set up at this time, but however this may be, we know that in the early stage, venesection is of the utmost value on account of the removal of the toxin. If we can take away, say the twentieth part of the blood of the body, and supply its place indirectly with normal salt solution, we diminish the amount of toxin and thus remove a source of danger. It will not be successful in all cases, because in some the last added portion of the pneumonia toxin is simply the last straw that turns the scale against the patient. I agree, however, with Dr. Tyson that this expedient will save life in a large proportion of cases.

DR. SOLOMON SOLIS COHEN, Philadelphia—Statistics have been published by men of high standing and by others not so great, of hospital patients treated for pneumonia, which seemed to prove that for the last hundred years the mortality of pneumonia, under all forms of treatment, has remained about the same—about 25 per cent. in hospitals—no matter what the treatment, or with no treatment. It should be remembered, however, that the given patient is something more than a mere unit in a column of statistics. I am convinced of the value of our therapeutic measures in pneumonia. I have seen lives saved by saline infusions, by venesection, by oxygen inhalations and by the combination of these measures, which I have been using for the last ten or twelve years, when indicated in the individual case. I have had opportunities of witnessing and of exhibiting to my classes many remarkable results, some of which are on record in published clinical lectures. I am sure that I have seen patients recover who, under the older methods, would have died. I have come to the conclusion that bad results in hypodermoclysis are often directly due to the use of a needle of too large a caliber and the consequent too rapid injection of the solution. I have found it best to use needles of moderate caliber and to inject the saline solution rather slowly. I prefer to inject from four to six or at most eight ounces subcutaneously in the course of twenty to thirty minutes, and this may be repeated several times in the day if necessary. This method is better than to give one large injection daily, as is usual. The mechanical obstruction to respiration, by the condensed lung, is the least source of danger to the patient. This is shown by the fact that after the occurrence of the crisis there is a marked change for the better in all the symptoms, without sufficient change in the physical condition of the lung to account for the improvement. The great danger is toxemia, which is the indication for venesection and hypodermoclysis. Venesection in the later course of the disease may be useful to relieve the right heart of the load put on it by the consolidation of the lung. Oxygen by inhalation will compensate when necessary for the respiratory loss caused by the pulmonary consolidation. It supplies condensed respiratory pabulum, thus reducing the work of the sound lung.

DR. HENRY BEATES, Philadelphia—In the emergency arising during the course of pneumonia, where the remedies referred to are necessarily employed, value attaches to the order in which they are used. This is exceedingly important. First, it is evident that death usually results under these conditions, because the heart is unable to carry the circulatory load, and therefore, with the venous side distended and the heart laboring, it is absolutely necessary to resort to prompt venesection. This not only diminishes the volume of blood in front of the heart, but, at the same time, gets rid of much of the toxin. The hypodermoclysis of normal salt solution should be carried on at the same time that phlebotomy is in progress, for physiologic reasons.

DR. W. W. TOMPKINS, Charleston, W. Va.—There is a marked difference in pneumonia between patients living in the country and those living in cities. The former are more likely to be benefited by venesection than the latter. Personally, I have had only one experience with venesection in the treatment of pneumonia. It is a method which I will hold in reserve and use in suitable cases. Dr. Fenwick of London, England, exchanged practice with his son. The son was in the habit of bleeding his country patients and with good results; when he came to London he used the same practice, but with fatal results. In this particular series of cases it demonstrated that in a rural and country district, where the patients lead out-of-door lives, it was good, but in crowded London it was bad. This demonstrates that one class should be depleted, the other sustained and strengthened. All of which goes to prove that environment has much to do with the method of treatment.

DR. TYSON—The fact that the removal of blood in the first stage of pneumonia also removes a certain proportion of toxins with it, is undoubtedly true; but the toxic danger is not so great in the early stage as it becomes later. There is no doubt that, even in the early stage, there is a certain amount of danger from the action of the toxin. I agree with Dr. Cohen as to the caution to be observed in performing hypodermoclysis. This caution, giving small quantities several times a day of the salt solution, I have always observed in cases of uremia, where no immediate danger threatens the patient and there is more time for the application of remedial agents. My intense desire to give relief quickly led me to give the saline solution, without waiting to perform venesection, and governed my treatment; whereas bleeding might have been resorted to with safety and followed by the salt solution, and possibly with much better result.

THE DRUG TREATMENT OF PNEUMONIA.*

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Croupous pneumonia is an affection of a dual nature: it is an acute specific fever, and at the same time an acute inflammatory disease of the lung. In formulating a rational treatment the dangers arising from each of these processes must be given due consideration. It is a well-established fact that the chief danger lies in the toxemia. The severity of this toxemia is dependent on the virulence of the infection and on the degree of reaction in the individual attacked, but it bears no relation whatever to the extent of lung involved. Cardiac weakness also contributes largely to the mortality of croupous pneumonia. In some instances this appears to result mechanically from the impediment offered to the circulation by the consolidated lung; more often, however, it is simply one of the local manifestations of the systemic poisoning. Complications, for the most part unpreventable, are the immediate cause of death in not a few of the fatal cases. Thus, endocarditis, pericarditis and meningitis are not infrequent; but as these affections are associated with the *Micrococcus lanceolatus,* any mortality that is due to their development must be credited also to the general infection. Finally, in rare instances, asphyxia caused by diminution of the respiratory surfaces is the chief factor in bringing about a fatal termination.

VARIOUS SO-CALLED SPECIFICS.

In view of these facts it is evident that any treatment to be really successful must be aimed at the infection itself or its resulting toxemia. Fortunately, in the majority of cases but little assistance is required of the physician, as Nature furnishes her own antidote so abundantly that the disease, after running a definite course, ends in complete recovery. In many cases this tendency to spontaneous resolution is so pronounced that it is not offset even by the most inappropriate drug-

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ging; on the other hand, the infection is at times so overwhelming in its virulence that death results despite the very best directed efforts. To-day one seldom hears of pneumonia being aborted by the timely use of veratrum viride. While this drug is undoubtedly of value as a circulatory sedative in certain phases of the disease, it is difficult to believe that it has any power in hastening the occurrence of the crisis. Under its use I have occasionally seen the temperature fall to normal in three or four days, but this has occurred quite as often under an expectant plan of treatment.

The treatment of pneumonia by large doses of digitalis, originally proposed by Petresco of Bucharest, has never had many advocates in this country. In 1894 Petresco reported 1,192 cases treated by this method with a mortality of 2.66 per cent. But the author himself states that the treatment is not applicable to very grave cases, and that his observations were made in a military hospital on young and robust men. Petresco's figures lose much of their significance when we compare them with the death rate in the German army, which, according to Osler, was only 3.6 per cent. in 40,000 cases of pneumonia among healthy picked men.

Aufrecht, in Nothnagel's Special Pathology and Therapy, ardently advocates the hypodermic administration of quinin—8 grains, once or twice a day—not as an antipyretic, but as a specific remedy. According to Petzold[1] the mortality under this treatment in 261 patients treated in the Altstadt Hospital of Magdeburg was 8.8 per cent., but we learn from Strusberg[2] that in the medical clinic at Bonn during the same period the mortality under symptomatic treatment was only 7.97 per cent. I have used the carbonate of creosote, which has been so highly extolled by Van Zandt and Weber in 9 cases; of these 2 died. The daily dose was from 40 to 60 minims. While no untoward effects followed its use, in no instance was the crisis hastened by the drug or were any of the symptoms of the disease appreciably influenced by it.

SEROTHERAPY.

Of all the specific treatments that have been recommended for croupous pneumonia that by antipneumococcic serum was the most promising. It aimed directly at the essential factor in the mortality, the toxemia. Perhaps sufficient time has not yet elapsed to warrant a final opinion on this treatment, but certainly those who have given it a fair trial will admit that it has fallen considerably below their expectations, and that it has yielded results in no way comparable to those obtained in diphtheria from the use of antitoxin. In a very fair test made by Dr. James C Wilson[3] in the German Hospital of Philadelphia the mortality in one series of 18 cases was 22.2 per cent. and in another series of 18 cases 35.3 per cent. Sears[4] of Boston has recently reported a series of 12 cases with a mortality of 25 per cent. The results obtained under these so-called specific treatments coincide so closely with those that have often been obtained under symptomatic treatment, and have been so variable in the experience of different observers, and even in the experience of the same observers working at different periods, that we are forced to conclude that the figures do not indicate any relation whatever between the remedies employed and the mortality reported. If such statistics possess any value it is in emphasizing the fact, well known but often forgotten, that the mortality of croupous pneumonia is exceedingly variable, fluctuating between 4 or 5 per cent. in the young and robust and 75 or 80 per cent. in the old and debilitated.

1. Aerzt. Centralzeitung, 1900, No. 13.
2. Therap. der Gegenwart, November, 1900.
3. Therapeutic Monthly, July, 1901.
4. Boston Med. and Surg. Jour., Dec. 12, 1901.

GENERAL EXPECTANT TREATMENT.

Although we have yet no specific remedy, much may be done in the way of symptomatic treatment to avert a fatal issue. In a large number of cases no drugs are needed. By confining his services to the careful supervision of the sick room, to the selection of nutritious but easily digestible food, to the recommendation of appropriate external applications, and to the critical study of the symptoms from day to day, the medical attendant will as conscientiously discharge his duty to his patient as he will by systematically prescribing drugs, which, even if they do no harm, can not possibly be of benefit. Until we come into possession of so powerful a weapon as is quinin in malaria, as antitoxin in diphtheria, or the salicylic compounds in rheumatism, our position in regard to the treatment of pneumonia had far better be one of armed defence rather than one of heroic aggressiveness.

The symptoms that most often demand individual attention are the pain, cardiac weakness, cough, fever, dyspnea, insomnia and delirium. If the pain be severe and fail to yield to local remedies, morphin should be given hypodermically or Dover's powder by the mouth. This treatment will serve also to subdue the restlessness and anxiety that often mark the onset of the disease, and which, if allowed to continue, tend to augment the exhaustion.

THE CARDIAC SUPPORT.

The most important indication in the symptomatic treatment of croupous pneumonia, and the one most difficult to meet, is to counteract the cardiac weakness. Alcohol is regarded by most clinicians as the best stimulant. The question whether this drug is a food or a poison need not be discussed here. If its reputation as a useful stimulant in croupous pneumonia and similar infections has not been fully established by the accumulated testimony of the past fifty years, then surely "experience is fallacious and judgment difficult." Often it is not required, but when the pulse becomes compressible and dicrotic, and the second sound at the pulmonary area loses its force, it should be given freely. The patients who need it most are the old, the debilitated and the alcoholic. Often three or four ounces of good whisky in the twenty-four hours will suffice, but in some instances two or three times this amount may be given with advantage. I know of no better rule for administering it than that laid down by Brunton: "Sit by the side of your patient for a while and watch him after the administration of a dose of alcohol, and if you find that the alcohol brings back the various functions nearer to the normal, then it is doing good; if the functions of the organs diverge further from the normal after the administration of alcohol, then it is doing harm."

After alcohol our thoughts naturally turn to digitalis. While this remedy is undoubtedly useful in some cases, its action is uncertain and often disappointing. In my experience it has been almost invariably badly borne when administered for the irregular flagging pulse of the period immediately following the crisis. Its frequent failure at other times may be explained by the fact that the cardiac insufficiency in the majority of cases is not dependent on simple dilatation or relaxation of the ventricles, but on degenerative changes in the myocardium, or perhaps, in some instances, on disturbances

of the motor ganglia of the heart, brought about by the infection. Often no gross lesions are found postmortem in the heart when there have been during life most pronounced symptoms of circulatory failure; moreover, the symptoms of cardiac embarrassment often disappear on the occurrence of the crisis, even though the consolidation in the lung still persists. Mechanical distension of the right ventricle undoubtedly does occur in some cases. It may be recognized by the enlargement of the area of cardiac dulness, by the marked cyanosis, the orthopnea and the small pulse. In this condition digitalis, by driving the blood with greater force against an impassable barrier, is likely to do harm; it is better to relieve the strain on the right ventricle by judicious venesection.

As a circulatory stimulant, strychnin generally proves more efficacious than digitalis. It should be given in ascending doses from 1/60 to 1/15 of a grain, careful watch being kept for the appearance of any untoward symptoms. In order that there may be immediate absorption large doses should always be given hypodermically. Caffein is a useful adjunct to strychnin, but, of course, it should not be used when there is cerebral excitement or insomnia. In threatening collapse I have found no stimulant so generally serviceable as camphor. It is especially useful in tiding the patient over the profound depression that often accompanies or follows the crisis. It is available also when pulmonary edema arises as a complication, and in this condition it may be advantageously combined with atropin. To secure the best results camphor should be given hypodermically, dissolved in ether or sterile olive oil, in doses of from 1 to 2 grains every two or three hours. In the absence of pulmonary edema subcutaneous saline infusion may be tried for its effect on the heart and the secretions; personally, I have never seen any definite good follow its use in pneumonia.

REMEDIES FOR COUGH, FEVER AND DELIRIUM.

The cough varies considerably; in many cases it is not sufficiently troublesome to require any special attention; on the other hand, it may be the most distressing symptom of the disease. For the hard, dry cough, especially of the first stage, no remedy is so useful as opium in the form of Dover's powders. Expectorants are rarely needed. The inflammatory exudation in the air vesicles is removed almost entirely by absorption, and to attempt its expulsion by means of drugs is useless. When, however, there is a good deal of bronchial catarrh with much viscid sputum, ammonium carbonate may be given to facilitate expectoration, but it should be withdrawn immediately if it cause any disturbance of digestion.

It is difficult to determine how far the fever itself is responsible for the disturbance of nutrition, but the fact that in a very large proportion of the gravest cases the temperature is not high indicates that the chief factor in bringing about the exhaustion is not the fever, but the toxemia. This being the case, and as the febrile period is generally of a comparatively short duration, the temperature is better disregarded entirely, or if treated at all, reduced by means of cold or tepid sponging. Experience is strongly against the use of such active antipyretics as antipyrin and phenacetin. By favorably influencing the pulmonary circulation, drugs that are employed in counteracting cardiac insufficiency are also of service in relieving the dyspnea. Naturally, the circulatory stimulants that are also respiratory stimulants, like strychnin and caffein, are the most useful. Oxygen makes the breathing easier, lessens cyanosis and conduces to sleep, and to this extent aids in conserving energy.

When insomnia and delirium are sufficiently severe to demand the use of drugs, morphin will generally be found the most efficacious. It is generally conceded that this drug is useful during the first two or three days of the disease in relieving pain and in subduing restlessness, but many clinicians condemn its use in the later stages of pneumonia, contending that it depresses the respiration, checks secretion and paralyzes the bronchi. Waiving theoretical objections, I have often used it with the greatest satisfaction in quieting delirium and in securing sleep. Sometimes the invigorating effects of a few hours of sleep secured by a single injection of morphin are truly remarkable. Of course, morphin should not be used when there is extreme dyspnea or when there are evidences of pulmonary edema. Next to opium I prefer chloral. Doses of from 10 to 15 grains are rarely followed by an appreciable circulatory depression, especially if given in conjunction with digitalis.

Delayed resolution is a troublesome complication. Fortunately it is of rare occurrence. In the few cases that I have personally treated resolution has ultimately taken place under repeated blistering and the free use of tonics. Riess has recommended injections of pilocarpin and Dieulafoy, Forbier and Lepine the production of aseptic abscesses by means of turpentine injections, but with these methods of treatment I have had no personal experience.

DISCUSSION.

Dr. W. J. Robinson, New York—Although, generally speaking, I have the highest respect for the opinion of Professor Klemperer of Berlin, who introduced the serum treatment for pneumonia, I have no hesitation whatever in saying that the antipneumococcic serum is perfectly useless in the treatment of pneumonia. I base this opinion on the fact that pneumonia is not due to a single bacillus and the danger is not due to a single cause; and, therefore, it is not suited to specific treatment. But it is not only theoretically objectionable; clinical experience has shown it to be followed by bad results. Several fatal cases have been reported. There is no analogy whatever to the use of antitoxin in diphtheria, because in this disease the danger is from a single cause. At present the rage for serums for all diseases is only a fad and is not destined to last long. The value of drugs is difficult to weigh in self-limited diseases, and when the case recovers it is difficult to say whether any given drug has been of value or not. As regards the use of drugs in pneumonia, my own impression is that creosote and its derivatives give the best results. The administration of hydrogen peroxid has been recommended on the theory that it would become decomposed in the stomach and would yield oxygen to the blood. I have not myself been able to obtain any results from its use.

Dr. E. F. Wells, Chicago—I have little confidence in the statistics of pneumonia as bearing on mortality under different modes of treatment. I collected statistics of nearly four hundred cases of pneumonia, some years ago, and found that most of the cases reported in medical journals had been published for the purpose of bolstering up some special method of treatment. We can see the fallacy of statistics when the unfavorable cases are not reported. On the other hand, we have statistics from hospitals dealing with a large number of cases, and in which a very large proportion die. The unreliability of deductions from such statistics is shown by the great difference in mortality in different groups, the rate varying from 3 to 95 per cent. Hospital statistics and cases published in the journals must be set aside as of little value for our purpose. With regard to the relative mortality in the robust and delicate patients, my experience in this matter has been different from that of the reader of the paper. I have observed that it is the robust and not the delicate subjects that are more likely

to drop off suddenly, while the weak are more likely to recover. As regards the means to be adopted for the relief of pain, their value is difficult to determine, as the pain in pneumonia is of short duration and usually ceases spontaneously within three days' time. If one gives a little morphin and the pain disappears in a few hours, he is apt to ascribe the relief to the drug, whereas it may not have been necessary, as the pain would have subsided without it. In cases of edema of the lung in pneumonia, do not forget the expedient of raising the foot of the bed, so as to enable the serum to flow out of the bronchial tubes.

One of the speakers said that pneumonia can not have a specific treatment because it is due to different germs and not due to a single cause. I, on the contrary, believe that pneumonia is the disease of all others, in which the authorities are agreed as to its cause, and that it is due to only one bacterium and that is the pneumococcus. One of the most remarkable effects of the pneumococcus on the human system is that its invasion is generally accompanied by a leucocytosis. It is when we have the initial chill that we find the notable increase in the leucocytes; it may be to treble the proportion found in healthy blood. This seems to be the natural means of resistance set up by the system to protect it from the pneumococcus. Whether or not we are doing the right thing in contracting the capillaries by giving digitalis at this time; or whether or not it would be better to give salicylic or nucleinic acid, which increases the number of the white blood-cells, is sometimes hard to decide. We know much about the pathology of pneumonia, but still have something to learn about its treatment.

DR. H. C. WOOD, JR., Philadelphia—I would urge discrimination in the application of remedies; to treat the patient and not the pneumonia is the safe rule to follow. I take exception to the statement of Dr. Cohen that the fact that the statistics for the last fifty years show no improvement in the results of treatment of pneumonia is to be disregarded. There is no proof that our results in pneumonia are much better than those of our fathers. We have no specific for pneumonia. The disease being of short duration and having no specific, the physician must be content with observing the symptoms and watching the course of the disease, guiding his treatment accordingly. If the temperature goes up, he gives a cold bath, or an antipyretic; if the heart becomes weak, he gives cardiac stimulants, and so on. We can watch the symptoms in pneumonia; but have very little knowledge of how to overcome them. If the heart is weak we give strychnia, forgetting that it is not the left heart that is giving out, but the right heart. It is a fact that we know very little about the effect of drugs on the right side of the heart. We do know, however, that, of some drugs, the effect on the two sides of the heart is different. For instance, nitroglycerin acts differently on the right side of the heart and on the left side. We really can do very little until we can settle this point. In my opinion, with the single exception of venesection, we have no remedy or method of treatment of unquestioned value in the treatment of pneumonia.

DR. JOS. M. PATTON, Chicago—I can hardly agree with the last speaker that we know nothing about the treatment of pneumonia, for, in fact, we do know about some things that we can do with success. In a patient where we have one whole lung to carry on its functions, and the right side of the heart is not overloaded, about the only real danger to be feared is the toxin. As regards the drugs used, the continued administration of digitalis may be objectionable, through its action on the left side of the heart on which there is no strain. Strychnia does good because it equalizes the circulation better than any other drug. In fact, in pneumonia I have obtained the best results from large doses of strychnin better than from any other drug. With regard to alcohol there is a difference of opinion. I have personally very little confidence in its beneficial effect, except at the approach of the period of crisis, when it may occasionally be given with advantage. I have not seen any good result from its continuous administration. As to the antipneumococcic serum, I have not arrived at the conclusion that it is absolutely useless. It may prove to be worse than useless, but its position is as yet undetermined. We have reason, however, to expect that something may come out of it in future. The mere introduction of the aspirating needle into the lung may, of itself, in cases of delayed resolution, do good by setting up a certain amount of irritation.

DR. THOMAS F. REILLY, New York City—The outlook in any case of lobar pneumonia depends largely on the condition of the kidneys. In the very young the kidneys are almost always in good condition and the mortality from this form of pneumonia is practically nothing. It is rare to find perfectly sound kidneys in anyone after fifty years, and hence the mortality is very high. The kidneys of alcoholics are generally diseased and are unable to throw off the poisons and, as a consequence, the disease is generally fatal. The value of the saline injections spoken of is due largely to the diuresis that follows their use. With regard to the means to be employed to afford relief from pain, I have found much value in the topical application of the combination of moist clay, glycerin and aromatics, which is put up by several supply houses and can be put up by any druggist. The employment of exploratory puncture in two cases of pneumonia with delayed resolution succeeded in materially hastening resolution.

DR. A. B. LYONS, Detroit—With regard to the mixture of glycerin and some base like kaolin, I think that if venesection will do any good by abstraction of blood, surely the application of glycerin will do good in the same manner. My own experience has impressed me very strongly in favor of this method of medication, and this form of relief especially. As yet there has been no official preparation of this kind, but we all know what it is: It is a preparation of glycerin, and we know that it is the effect of glycerin to draw moisture to itself, and when applied to the skin it draws serum from the blood, very much on the same principle as the use of a blister.

DR. H. H. BRIGGS, Asheville, N. C.—When I began the practice of medicine, in 1860, a book had just been published by J. Hughes Bennett of Edinburgh, which gave statistics of cases of pneumonia, in hospitals of Paris and elsewhere, in comparison with other cases treated by himself. The proportion of deaths under the usual treatment at that time with venesection and depressants, was about 33 or 34 per cent.; under the expectant treatment, in which nothing was done except to look carefully after the welfare of the patient, there was a mortality of only 23 or 24 per cent.; while under Bennett's supporting treatment the deaths were only 3 or 4 per cent. This coincides very closely with what Dr. Wood said; it is not so much the medicines that are used, as it is the care of the patient, which gives the best results. As shown by Bennett, even the expectant treatment showed much better results than the treatment generally pursued in those days. The principal object of Bennett's treatment was to support the strength, to watch the case, to take care of the secretions, to keep the patient quiet, and to see that he was never awakened unnecessarily. The results of his treatment were satisfactory and I am not aware of any statistics which prove that the treatment at the present time is any more successful than Bennett's. No specific has been found and until this has been done, there can be no better treatment. The important things are to take care of the secretions, to support the heart, to give suitable nourishment, and do the best to sustain the strength of the patient until the disease runs is course, which will usually be in a week.

DR. W. W. TOMPKINS, Charleston, W. Va.—For a number of years I have been in the habit of going about among the medical men in the colleges and hospitals in order to take notes of different methods of treatment. I found in Baltimore, Philadelphia and New York that pneumonia was treated with different remedies, and when I returned at other times, they had changed to other remedies. I deplore a tendency to depend on special medicinal agents in the treatment of pneumonia. Personally, I believe that the only safe thing to do is to treat each individual case of pneumonia according to its special needs. I think that as regards the influence of age on mortality, the more advanced in life the cases are, the more likely we are to lose them. I urge especially the importance of looking after the heart's action and the careful nursing of the patient. When a patient with acute pneumonia gets well, the doctor is fortunate and the patient is more fortunate. I do not approve of cough syrups and mixtures, as they derange the digestion, and this causes a loathing for food. Keeping up the strength

of the patient by proper digestible and easily assimilable food are as potent factors in a cure as are drugs.

DR. HENRY BEATES, Philadelphia—I wish to ask Dr. Wells what type of leucocytosis he has found.

DR. WELLS—The ordinary form of leucocytosis occurring in pneumonia. I have found it within an hour of the onset of the attack. At the same time, or earlier, the eosinophiles are reduced in number, and in the course of a few hours are driven out of the circulation. It is at this time that the multinuclear cells, as motile secreting glands, are engaged in battle with the toxins of pneumonia. I look on this condition as of special interest and as not without diagnostic importance.

DR. STEVENS—In view of the obstacles in the way of the successful cultivation of the pneumococcus in artificial media I have grave doubts as to the genuineness of much of the serum sold as antipneumococcic serum. In reply to the question about hydrogen dioxid I have had no experience with it. I think that too much stress has been laid on the condition of the right ventricle of the heart. The chief danger lies not in the strain to which the right ventricle is subjected, owing to the mechanical obstruction in the lung, but in the toxemia which attacks the heart as a whole. As to the blood-count, I think it is a mistake to put too much stress on leucocytosis in the matter of prognosis. A marked leucocytosis does not always mean good reaction, nor a slight leucocytosis poor reaction. I believe, however, that hypoleucocytosis is to be regarded as an unfavorable sign. Of 11 cases with pronounced hypoleucocytosis that have come under my observation only one recovered.

(This symposium on pneumonia will be concluded next week by the article by Dr. E. Fletcher Ingals on "The Prognosis and Treatment of Croupous Pneumonia, with an Analysis of the Cases Treated in Cook County Hospital for Fifteen Months Preceding April 1, 1902," with the discussion thereon.)

EXPERIMENTAL RESEARCH ON THE HEART OF THE DOG.

WITH REFERENCE TO CARDIOTOMY AND CARDIORRHAPHY.*

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Nothing indicates more clearly the lack of confidence in surgical intervention in lesions of the heart than that they have been treated as anomalies. The best history of the surgery of the heart accessible to the general reader is to be found in a work that treats of anomalies and abnormalities. They of themselves show that the heart is more susceptible to injury, disease and surgical operation than generally supposed. Simple puncture with a needle was at one time thought to result in instant death; indeed, such thought generally prevails at this time. Infection in animals is more likely than in man because of the great difficulty in making them sterile and keeping them so after they have been operated on.

If experimental physiology and surgery has taught anything, it is to reason by analogy from animal to man. Animal experimentation has led the way to more successful surgical work and it will continue to do so. It not only shows what can be done, but it teaches by manipulation alone, if nothing more, how to do it.

There are many diseases and many lesions which do not manifest themselves or cause symptoms, which are readily discernible. In other words, the particular lesion is wholly unsuspected until it has advanced far enough to produce functional disturbances, which are often serious. Then search is made for the cause. Then, again, it is possible to diagnose certain diseases only by the symptoms, caused by the functional disturbance produced by the lesion, and not by the lesion itself. The functional disturbances resulting from a given lesion are not always the same.

Pathologic physiology receives only scant attention or none at all in our medical schools, yet it is of the utmost importance. Only a few works on this subject are accessible, and these are unsatisfactory in some respects. Many questions of the utmost importance are unsettled. These remarks apply with peculiar force to the heart. The intimate connection of the function of respiration with the heart and the disturbance produced in the functions of the other, when either heart or lungs is diseased, is the reason for taking up both the normal and pathologic physiology of the heart.

Aspiration of the pericardium should not be attempted owing to the dangerous consequences, such as injury to the coronary, internal mammary and intercostal vessels, and puncture of the walls of the heart itself; and also, the possibilities of infection from the escape of fluid through the puncture into the pleural cavity and mediastinal space. The probabilities are that in many cases in which fluid has been purported to have been aspirated from the pericardium, that the fluid was contained within the pleural cavity, mediastinal space, pulmonary cyst or abscess or a pleural cyst.

The heart is very susceptible to alkaline solutions, which accelerate it. The absence of stomata in the diaphragm within the pericardium is to exclude fluids from the peritoneal cavity. The pleural fluids will, however, pass through the pericardium. In the lower animals (fish) the pericardium and diaphragm are wanting. As they ascend in scale the pericardium becomes more fully developed to form the pericardial sac; the same is also true of the diaphragm.

There is no way of determining whether or not the heart will absorb to any degree any fluid that may be contained within the pericardium. Neither have such observations been made on the ability of the pericardium itself to do so. It has, however, been determined that the heart will not withstand a high degree of pressure from fluid or otherwise within the pericardial space. It will stand a greater pressure if the pressure be gradually increased as in the case of pericardial effusion, resulting from pericarditis. It will, in a normal state, absorb more or less of its exudate, and it will probably have a greater capacity to absorb in a pathologic state.

Pressure from any source may be sufficient to force a part, or all, of the blood out of the cavities of the heart. This may be gradual or sudden, fatality resulting only when functional circulation can not be maintained. The consequences are less severe and serious trouble delayed if the pressure is increased slowly, as by the growth of new tissue. Rapid pressure is usually due to change in shape of the chest from trauma, or from concealed hemorrhage within the pericardial, pleural or mediastinal spaces.

OPERATIVE TECHNIC.

Asepsis.—Sterilization of the local area of the dog is almost impossible. The area should be shaved after the dog has a thorough bath, which is difficult to give to tramp dogs, as they are not acustomed to it. A sterile sheet, in which there is a hole large enough to operate through, should cover the dog. Alcohol or turpentine is applied to the shaven surface, which is then ready for incision.

Anesthesia.—Ether should be employed in all cases for operation, and carried to complete relaxation and chloroform given to produce death.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Incision Through Skin and Muscles.—The incision should be made longitudinally, beginning at the third or fourth rib on the left side, and about one-third to one-half inch from the internal mammary and diverging slightly from the sternum down to the desired point, even to the apex of the heart. It may be extended to the attachment of the diaphragm and down to the costal cartilages.

The external soft tissues being divided are then reflected outward, great care being taken not to have the point of the knife slip into the chest cavity, as the heart, lungs or arteries may be injured.

Division of Cartilages and Bone.—Divide the third, fourth, fifth, sixth and seventh ribs, if necessary, great care being observed in opening the chest that bone spiculæ are not left to lacerate the heart during its pulsations, otherwise serious, if not fatal, laceration of its wall might ensue. Such an accident must be guarded against during the entire operative procedure. Great care must be taken to avoid such an injury to the pericardium also. It is, therefore, safer to completely sever the bony structures with a sharp cutting instrument than to fracture them by force or otherwise. The same precautions should be observed in dealing with the cartilaginous structures. If necessary, the cartilages may be cut near the left border of the sternum and retracted outwards to the right or left.

Mediastinum.—If the mediastinal space be opened the respiratory motion of the thin membrane that walls off the right lung may greatly interfere with rapid work. It will especially be so if overdistension of the right lung should rupture it. The right lung would then retract upon itself. It is, therefore, safer and less difficult if that space be not opened. The opening can, however, be closed with the hand of an assistant during the entire operation.

Hemorrhage.—The bleeding in the skin and muscle is seldom annoying. The intercostal arteries usually cease to bleed after they have been exposed to the air and sponge pressure; if not, they can be easily controlled by forceps. The internal mammary once wounded, the hemorrhage is great and troublesome to check, except in one way, namely, pull the skin to the right, having only the costal cartilage and muscles to constitute the chest wall, then with the finger, or a larger pair of acupressure or artery forceps, include all the tissues between the cartilages, just above the wound, in the forceps put on parallel to the long axis of the costal cartilage or in the transverse diameter of the chest. It may be necessary to do this above and below the wound, as the internal mammary artery may bleed a little from below, the anastomosis being rather free with the deep epigastric. After the hemorrhage has been checked it is best to apply a ligature *en masse,* as it saves time, which is an item with the heart exposed.

The first opening should give good view and room to work; if not, incise two inches to the left in the intercostal space and cut the ribs transversely with a pair of sharp bone forceps, beginning at the outer border of the incision in the intercostal space. If necessary, other ribs are divided so that a flap sufficiently large should be turned back to give ample room.

There is no occasion for using gauze or any kind of packing in heart injuries, much less so in pericardial injuries, as bleeding from the pericardium is insignificant except in cases of injury at the point of attachment of the extreme base of the heart; even then experiments show that hemorrhage from injuries to it are but slight. To secure beneficial results from gauze packing in heart injuries it is necessary to employ firm pressure. To do this would interfere with the heart's action. Therefore, it would be more injurious than beneficial, because such pressure would force the heart back on the posterior wall of the thorax.

If a patient survives the immediate thrust of a stiletto-like instrument, however small, the probabilities are that the hemorrhage will be less when the weapon is withdrawn at the end of several hours than on its immediate withdrawal. The styptic effect of the metal, as the result of coming in contact with blood, together with the formation of clots and the closing of the opening resulting from the puncture by allowing the weapon to remain, will be amply sufficient in a few cases to prevent a fatal hemorrhage on its withdrawal.

The blood that most resembles in constitution the blood contained in the cavities of the heart is that found in the coronary arteries which, like that in the heart, coagulates with wonderful rapidity.

The blood, after having made the round in the body, comes back to the heart practically exhausted of oxygen. It not only contains CO_2, but other chemical compounds formed by the debris collected uniting with the constituents of the blood. At the same time, it contains more fibrin and doubtless also more of the other elements which add to the coagulability of the blood, for in its course it has taken up the material prepared by the digestion process to repair the wear and tear of the body.

In all cases where important blood vessels were punctured, the observers were impressed by the rapidity of coagulation. It is very probable that Nature has so arranged that in case of trauma where there is hemorrhage of the more important organs, coagulation shall be more rapid than elsewhere, thus preventing death. It seems probable that the rapidity of coagulation is proportionate to the importance of the organ to the animal economy.

Contraction of a lung when the thorax is opened will cause congestion of the heart. The contraction of the lungs, whenever the chest is opened, exerts considerable pressure upon the various pulmonary blood vessels and thus forces a volume of blood, equal to nearly the entire volume of blood normally contained in the lung, into the already engorged heart, thus bringing about a congested condition of this organ.

Care should be taken in operations on the heart, as undue manipulation alone may cause death from paralysis of the vagi.

Opening the Pericardium.—Having checked all hemorrhage from the chest wall incision, and the wound being dry, lift up the pericardium with a tenaculum. Great care must be taken not to puncture the cardiac tissue or coronary artery. The tenaculum should be inserted over the ventricles, as there is danger of wounding the thinner auricular wall.

The incision should be made with its longitudinal diameter and may be extended to any degree necessary to facilitate rapid work and should be done by tearing. Each bleeding vessel must be closed as soon as opened. When the pericardium is incised it retracts, and owing to its thinness is almost lost sight of. It, however, can be replaced and sutured in position with a moderate degree of ease. The pericardium is normally completely filled by the heart, and when the heart is beating and not even restrained by the chest wall, its range of movement is very great. This must be seen to be appreciated.

The pericardial cavity is now cleared of all clots by one sweep of the finger, if possible. Gauze may be carefully wrapped around the finger, but it is best not

to use it. Pericardial adhesions increase danger of operations.

Treatment of the Heart.—The heart is gently grasped in the palm of the left hand, great care being taken not to use any more pressure than is absolutely necessary to enable the needle to be plunged through the wall of the incision.

The heart can be handled to a remarkable degree without any appreciable change in beat, except the dilatation caused by the loss of the supporting sac—the pericardium. This handling of the heart holds good, provided not too greatly prolonged. The loss of support of the chest wall and, more important, the close-fitting pericardium, causes a great extra strain on the myocardium.

Careful inspection of the naked heart shows its great distension, and when it seems or really is paralyzed by over-distension; holding together, for a moment, the wound in the chest wall, will cause the heart to regain its normal action. The operation may now be continued. If necessary, this may be repeated several times during the operation. The heart operation being finished, it is returned to the pericardial cavity, the pericardium now being brought into position with small tenacula, a running suture of catgut is placed in it.

As the artery tension is not so great when the chest wall is closed, a suture can be used that need not last so long. The pericardium tends to go back in place after the replacement of the heart. There was a plastic pericarditis in all the autopsies, and the pericardium was adherent for a variable distance around the incision in the pericardium, from half to one inch.

In most cases the pericardium was not sutured and the result was very good as to replacement. So good, that in any case in which there is danger in prolonging the operation, one is justified in allowing the pericardium to remain open, for the closing of the wound tends to keep the heart in place and keep the pericardium closed.

Ventricles.—This same work does not so well control the hemorrhage in wound of the left ventricle, as the wall is very strong and resilient; however, this method is the best and most convenient, and it is always easy to govern the degree of pressure, which should be only great enough to prevent blood from coming out during systole, and in diastole the pressure should be slightly relaxed.

As to putting the needle through during systole or diastole, I think that will be forgotten when it comes to the work, as with a heart bounding and changing position at least one-half to one inch seventy to one hundred times a minute, we are glad to get a needle within one-quarter inch of the mark aimed at.

Auricles.—When the right auricle is opened, naturally the blood comes out with considerable force, but this can be entirely controlled by putting the ball of the finger over the opening, yet the force does not have to be great enough to obliterate the auricle or press the walls in contact. The pressure can be accurately gauged in this way, and it controls the hemorrhage almost perfectly.

Suturing the Heart.—This is very essential. Should a needle not be ready, the finger can be kept in place while a well-curved needle is passed from one side to the other under the finger. The needle should be long and a half-circle, but not heavy. Theoretically, to insert the needle in diastole is right, but it is one part of theory that we lose sight of in the critical moment, and should the heart cease to beat for a few seconds to a minute, or even two minutes, which it does, our duty is to keep the finger on the heart wound and close the wound in the chest by seizing its edges, keeping the finger in position. Then, if the heart resumes its beat, further effort can be made to close; if not, the work is finished anyway.

The question as to whether to continue work even though the heart stops is an open one. On one side we have the very great advantage of a quiet tissue to work on, which will be positively frightening when it comes so suddenly, and on the other the less chance or probable less chance of resuscitation, if we keep the chest open. We should choose the lesser evil if we can sometime decide which really is best.

In suturing the heart tissue the organ should be held as securely as is consistent with minimum pressure and suturing done as rapidly as possible, knots being made by an assistant. Glover's continuous suture is preferable to all others, because fewer and less complicated knots are required. This is especially desirable when silk is used, the object being to get rid of knots by absorption as quickly as possible.

The simple continuous suture without knotting, except in the first and last punctures, would be ideal but for the great danger of the suture breaking, and thus allow reopening of the wound. This is the great danger in using absorbable or non-absorbable material, as they must of necessity be very light. Both silk and kangaroo tendon have been used with great satisfaction in suturing, penetrating and non-penetrating wounds of the heart, also for ligating the coronary arteries at various points. However, the preponderance of evidence is in favor of the interrupted suture, and that it should be twisted silk. Even though kangaroo tendon is more absorbable, wounds of the heart repair themselves as rapidly, if not more so, than other tissues, and the pericardial adhesions are proportionate to the extent of injury, whether clean or infected.

Interrupted sutures should be used, and the needle and silk should be as small as will render service. They should be about one-eighth of an inch apart, and taken deeply into the tissue. If the cavity of the heart has been opened the needle should be made to pass through the entire thickness of the heart's wall. If the endocardium has not been punctured, the needle should be made to traverse the floor of the incision. The strength of the suture material should be determined at the time of operation. Knotting of the sutures should be firmly secured and their respective ends about one-quarter of an inch in length. If shorter, the constant action of the heart may possibly untie them.

Kangaroo tendon has been used in suturing muscular tissue of the heart and ligating the coronary arteries with considerable satisfaction, more especially in ligating the coronary arteries. Its life will depend on the size and quality—the greatest objection being to its size. A large needle is required and the punctures from it must necessarily be larger than when silk is employed. Catgut offers the same objections.

It is pretty well agreed on by experimenters that the sutures should be applied during systolic relaxation, that the cut edges may be perfectly coapted. However, Rhen tied them during diastole with equal success.

It is not necessary to suture or apply any kind of treatment to some wounds of the heart; they will close and recover spontaneously. It is impossible to say or determine the size of wounds necessary to be sutured, or to be let alone, except from continuous bleeding, which can only be determined by opening the chest. It must

necessarily require much time and careful observation of many heart wounds, to determine the necessary procedure in each individual case.

The probabilities are that punctures, however small, into the left ventricle or auricle become enlarged with its systole and that death results sooner or later from hemorrhage alone. Not so, however, with the right ventricle and auricle, the mortality being less with similar wounds. Therefore, one is justified in believing that sutures are less likely to tear out in the thick walls overlying the cavities of the left heart. This statement appears inconsistent. In the more highly developed and older animals of mature ages the heart will be more likely to be sutured successfully.

The superficial vessels (coronary arteries and veins) lie side by side and the amount of hemorrhage in case of trauma depends on its distance from the origin of those vessels. It will depend also upon the character of the wound. Knife and needle wounds, or those of sharp-edged weapons bleed the most and superficial lacerations least.

Closing the Chest Wall.—The closure of the chest of animals is difficult for the reason that the animal can not be kept quiet. Of course, there are several ribs, and at times these are to be closed in two places.

There was silkworm gut and silk (heavy) used in most cases, silk for the bony wall and intercostal muscles, one suture on each side, or rather one between each rib; the ribs were as nearly approximated as possible. Then the muscle and the skin all in one layer sutured with silkworm gut. As before stated, the two tiers of sutures do not come directly above one another, due to the fact that after the first incision was made the outer flap was dissected up for a distance of an inch and then the wall opened. This puts the two rows an inch apart and protects them from the contamination by infection and also makes a sort of valve, like the operation for colotomy and gastrotomy.

In putting in the external sutures they should be close and extend down into the intercostal muscle under the line of skin incision to add to the security of the wound. Not often was there any trouble in getting the wound closed well enough to prevent the passage of air into the pleural cavity.

Drainage and Dressings.—Drainage should be provided for in the same way as wounds in other parts of the body and governed by the same principles. Dressings should be aseptic and securely held in place with adhesive plaster and bandages encircling the body and about the shoulders.

Post-Operative Treatment.—Simple nutritious food should be prescribed with more or less stimulation, as the case may require. Alcohol by the stomach in the absence of nausea. If there is nausea it should be given by the rectum.

Artificial heat should be applied if the temperature become subnormal or if it be otherwise indicated. Oxygen is indicated and is probably the most satisfactory way of stimulating when stimulation is demanded.

RESULTS OF EXPERIMENTS.

In carrying on the series of experiments the object was to induce as many complications as possible. That this might be accomplished aseptic principles were disregarded and the pleural cavity many times entered. In a few instances clots were allowed to remain in the pleural or cardial sac and sometimes both, that their disposition might be observed. In Case 1, two tablespoonfuls of blood were allowed to escape from the coronary artery into the pericardial sac and there allowed to remain. The clot was afterwards found intact.

Pericardium.—Removal of the pericardium by incision was done in two cases. In one death did not ensue; dissolution occurred in the other (Case 8) as the result of infection, which might have been avoided. In the case of recovery, the heart was adherent to the surrounding tissues. In two cases the pericardium was divided from apex to base with scissors and allowed to retract upon itself, leaving the heart practically in the same condition as if the pericardium had been removed by excision; death resulted in one of these cases.

In Case 5 the pericardium was divided longitudinally and sutured to the chest wall with silk. The animal was killed sixteen days afterward. Even though this dog on the third or fourth day removed these sutures in the chest wall with his teeth, the wound was not infected. He was allowed to lick the wound until the sixteenth day, when he was killed. Autopsy revealed about one ounce of serous fluid in the pleural cavity. There were adhesions of the pleura, pericardium, lungs and heart to one another and to the chest wall.

Coronary Arteries.—It has been found that the ligation of either of the coronary arteries at any point of their distribution will not produce death. In Cases 1 and 9 silk was used for ligature. In Case 3 kangaroo tendon was employed, the ligature being applied at the origin of the artery. The dog's life was taken in the latter case on the fourteenth day and complete repair following the ligation found to have taken place. Several similar experiments were made with the anterior coronary arteries with practically the same results.

Accidental puncture of one or more branches of the coronary arteries occurred in three cases, more or less complicating the operation.

In Case 2 the posterior coronary artery was ligated about midway from apex to base, the second branch being accidentally punctured with the needle was also ligated at the bifurcation of the main branches.

Incisions.—Penetrating and non-penetrating wounds of the heart were made with a bistoury after the chest had been opened and were allowed to remain open from one to ten minutes before closing them with suture. Oblique perforations bleed less, as they are valve-like in character.

In Case 6 two incisions were made in the apex over the left ventricle, each being one-half inch long. The dog died at the end of seventy-two hours. The incisions were estimated to penetrate about one-fourth the thickness of the ventricular wall. They were shown at autopsy to have practically repaired themselves. The dog was found to have general tuberculosis, which was suspected at time of operation and which was, no doubt, the cause of his death, there being no other perceptible cause.

In Case 9, while suturing a penetrating wound three-eighths of an inch long, made in the left ventricle, the left branch of the anterior coronary artery, which had been accidentally punctured, was included in the last and upper suture. The animal died at the end of seventy-two hours. Autopsy revealed about a pint of bloody fluid in the pleural cavity. Also adhesions between the pericardium and chest wall, and between the pericardium and heart. The wound in the heart was completely and permanently closed.

In Case 10 a fine needle armed with silk was made to pass so as to make four sutures closely approximate over the left ventricle, the object being not to perforate the endocardium.

Case 11 demonstrates the suturing of a non-penetrating wound one inch long, involving about half the thickness of the ventricular wall and in which silk was used for suture. Complete suspension of respiration lasted two minutes, but operation was not discontinued during this time. Normal respiration was re-established spontaneously. Death occurred seventy-two hours afterward as result of infection due to the animal having torn out all the sutures in the chest wall. The incision in the heart had firmly united, the heart itself being nearly firm.

In a small non-penetrating wound in Case 14 in the wall of the left ventricle, a continuous suture of silk was applied. Respiration ceased, as the pericardium was being opened, but soon re-established itself and again ceased upon completion of the last stitch. It was not again re-established. The heart continued to beat for two minutes after the last respiration. If death had resulted from the puncture of one or more cardiac ganglia, the heart would not have continued to beat for two minutes after the last respiration.

In Case 17 death occurred while incision was being made in the left ventricular wall. This may have been due to injury to one or more of the automatic ganglia. This is hardly probable; at least, it has not been proven because death has occurred under similar circumstances without any injury to the heart.

An incision requiring two silk sutures was made in the wall of the left ventricle in Case 18. These sutures were made too tight and therefore cut through the muscular tissues of the heart, resulting in death.

Needle Puncture.—One or more punctures of the heart were made in several cases in various portions of the heart. In one, eighteen such punctures were made in various portions of the heart, from the apex to base, the object being to injure the cardiac ganglia. In no instance did death ensue, nor were the movements of the heart influenced to any noticeable degree.

Cardiac Stimulation.—Stimulation of the heart to action after it has ceased was accomplished several times by rhythmically compressing the apex of the heart with the fingers, also by pricking the apex of the heart with a needle.

The most interesting of all such experiments was in Case 16, in which a non-penetrating incision was made in the left external ventricular wall, necessitating the introduction of four silk sutures to close it.

Case 16.—Aug. 21, 1901. Very fat, black mongrel, age 4 years, weight 50 pounds. Chest cavity opened and pericardium divided. An incision one-half inch long was made in the external wall of the left ventricle; incision in heart's wall closed with four sutures of silk. At this stage of the operation respiration ceased. Muzzle was taken off. Cone for applying anesthetic had been withdrawn about the time the operator began to suture. The operator held the opening in the chest cavity closed with both hands; an assistant kneaded the abdomen in an effort to restore respiration. At the end of the first minute the operator introduced one hand into the thoracic cavity, still holding the chest opening closed with the other hand, and stimulated the heart by pinching the apex. After a time the dog took a deep, labored inspiration. Then respiration was suspended again. Again a few deep, labored inspirations; then suspension for a considerable interval. This procedure continued for several minutes. There would be several deep, labored inspirations at comparatively short intervals of time; then inspirations would be single with a longer interval of time between each inspiration; then a series of labored respirations at shorter intervals of time between each inspiration.

This alternation of single, deep, labored inspiration at considerable intervals followed by a series of several inspirations not quite so labored, and at shorter intervals between each inspiration continued until the dog regained normal respiration. The operator, in stimulating the dog's heart, observed and called the attention of his assistants to it, also that the heart began beating at the end of each inspiration. There were three beats of the heart after each inspiration. The movements of the heart ceased with the suspension of respiration. After each labored inspiration the heart would beat three times, but would be absolutely motionless in the interval between inspirations. The heart's movements were completely suspended 3¼ minutes. Respiration was suspended this length of time, and the heart did not beat until after the first inspiration. It took about three minutes after the first deep, labored inspiration for the dog to regain normal inspiration.

In no case when suspension of respiration occurred in this series of experiments were drugs given subcutaneously or otherwise to promote the heart's action. Neither was resort made to transfusion or any other artificial means employed to stimulate the heart.

Autopsy.—Dog died August 29, and postmortem was made the same day. Infection general; a quart of bloody fluid in pleural cavity; sutures in both the chest wall and cutaneous structures had rotted away. Pericardium, heart, pleura and lung were adherent to one another and to the chest wall.

ADDRESS ON AN EXHIBIT OF EARLY (PRIOR TO 1860) BRITISH AND AMERICAN OPHTHALMIC LITERATURE.

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(Concluded from page 1156.)

Two years after the publication in Philadelphia of Saunder's work, there appeared the first text-book by an American writer, George Frick. We owe most of our knowledge of this pioneer of American ophthalmology to our distinguished colleague. Harry Friedenwald. I quote from his interesting contribution to the *Johns Hopkins Hospital Bulletin* for August-September, 1897, "The Early History of Ophthalmology and Otology in Baltimore."

Frick was born in Baltimore in 1793. After obtaining a broad classical education he entered the University of Pennsylvania, where he obtained the degree of doctor of medicine in 1815, and in 1817 he was admitted as licentiate of medicine into the Medical and Chirurgical Faculty of Maryland. He then spent several years abroad, returning to Baltimore about 1819 to engage in the practice of ophthalmology. He was appointed surgeon to the Baltimore General Dispensary, where he established the first Eye Dispensary in Baltimore, in 1824. In 1882 he delivered clinical lectures at the Maryland Hospital. His name is found on the list of vaccine physicians for 1821. He was a member of various medical societies; was secretary of the Faculty in 1823, and joined the Maryland Medical Society in 1822. He was much interested in general science, and was one of four physicians to organize a society for promoting science in 1819. He was likewise a member of the Maryland Academy of Sciences, its librarian in 1824 and curator in 1836. He devoted himself to the practice of ophthalmology and to the cultivation of general scientific studies, as well as to music for a number of years. He was unfortunate in growing very deaf before middle life, and it is probable that this interfered greatly with his practice in medicine; for somewhere about 1840 he entirely relinquished it and left Baltimore to spend most of his time in Europe, paying occasional visits to this country. He died in Dresden, March 26, 1870, aged 77 years. Dr. Frick had never married. He was a man of very retiring and modest character and of kind disposition. He was a careful scientific student and his work and writings deserve high praise. In 1820-21 his article on "Observations on Cataract and the various modes of operating for its cure"

appeared in the *American Medical Recorder* of Philadelphia. In 1821 an article on "Observation of the various forms of Conjunctivitis" appeared in the same journal, and in 1823 his paper on "Observation on Artificial Pupil and the modes of operating for its cure." His most important work, however, was "A Treatise on the Diseases of the Eye; including the doctrines and practice of the most eminent modern surgeons and particularly those of Professor Beer," which was published in Baltimore by Fielding Lucas, Jr., in 1823. It was inscribed to his teacher, Dr. Physick of Philadelphia. It is well and clearly written, the system on which it is classified is excellent, and no greater praise could be given it than stating the fact that it was republished three years later in London by an English surgeon, Richard Welbank, a member of the Royal College of Surgeons and of the Medical and Chirurgical Society of London, and dedicated to the ophthalmologist, William Lawrence. Numerous foot notes were added, but the text suffered no change. The reviews which the book received were very complimentary. The *Philadelphia Journal of Medical and Physical Sciences* (probably Dr. Isaac Hays) contains a review covering 18 pages: "The author evidently possesses a cultivated and well-disciplined mind; he appears to be intimately familiar with German writers, and we feel much indebted to him for making us acquainted with their writings."

In the *American Medical Recorder* of 1824 a still longer review is to be found, covering 32 pages. The writer describes the book in terms of high praise. He "offers the humble tribute of (his) thanks to the author for the benefits which he has conferred on the profession generally, by presenting them with a volume of great value and utility, and one which was much wanted. As a manual of the diseases of the eye, we believe it to be the best which has been published. It contains all the improvements which have enriched ophthalmic surgery, in such a surprising degree within a few years past," etc.

In 1825 this work was placed on the list of those which the student was required to have read before applying to the Medical and Chirurgical Faculty of Maryland for the examination for licentiate in medicine.

While we are on this subject let me remind you that Frick's was not the only early ophthalmic treatise written by an American and republished in London. Littell's "Manual of Diseases of the Eye," first printed in Philadelphia thirteen years after Frick's treatise saw the light, appeared in London two years later (1838), revised and enlarged by Hugh Houston. The preface to the first edition, which was a very creditable performance, exhibits, however, an astounding ignorance of contemporary literature. The author had never heard of his compatriot, Frick, and I suspect was equally ignorant of the writings of several of his predecessors. For example, he says nothing about a compilation, published in 1832 by W. R. Lucas, of John Mason Gibson, who, like Frick, was a member of the Baltimore school. Friedenwald says of Gibson:

He was admitted into the Faculty in 1825, and that his name appears as late as 1848 in the list of members with the title of L.M. In the next succeeding list published in 1853 Gibson's name is missing. In the preface he tells us that his book is an "attempt at collecting the best matter on diseases of the eye"; that "diseases casual to vision are many and frequently met with in this country; the curative practice has not been sufficiently inculcated in our universities, by impressing on the mind of the student where and when the importance and great nicety of judgment are requisite in the treatment of them, and that by inadvertent and malpractice the victim may grope through his existence here in the valley of darkness." The work is one of compilation, "being made up of extensive quotations from the classical writers of the day." He claims originality only in the construction of his plates, and so far he is certainly correct, for the drawings are quite unlike anything seen in Nature. The arrangement of the work is very curious. The chapters follow in this order: Anatomy of the eyeball, cataract, ophthalmia, corneitis, iritis, choroiditis, retinitis, inflammation of the lens and its capsule, ulcers of the cornea, opacities of the cornea, pterygium, prolapse of the iris, extirpation of the eyeball, extraneous bodies, diseases of the lachrymal apparatus, under which is included entropium, ectropium, epiphora, encanthus, injury of lids, ophthalmia tarsi and fistula lachrymalis, looking very much as though the subjects had been drawn haphazard from a grab-bag. At the end of several chapters the author adds original remarks. When we consider the very excellent and systematic work which Frick had published, nine years previously, as well as such other works from which copious quotations are made, it is quite inexplicable why Gibson showed such disregard of systematic classification, or indeed what purpose he had in publishing the work at all.

I can not let this opportunity pass without a reference to the fact that Americans early began to push forward the car of ophthalmic progress. In a recent review of this subject I pointed out (what was known in a general way) that Isaac Hays, the first editor of the *American Journal of the Medical Sciences,* was, as well, a voluminous writer on ophthalmic subjects in the still earlier *Philadelphia Journal of the Medical and Physical Sciences.* He was the inventor of the knife-needle, pictured in Bull's edition of Solberg-Wells' "Treatise on the Eye" (page 339, 1855). In the former journal for November, 1831, will be found one of the earliest accounts, by H. Morton, of the relations of convergence to accommodation. Again, in the same periodical, for April, 1845, Earle has written an original essay on "Color Blindness." If John Taylor did not do the first operation for strabismus it is highly probable that the idea was carried into practice by at least two Americans years before Stromeyer and Diffenbach published their monographs. Here is the evidence, which you may accept for what it is worth: Atwell, writing in the *Philadelphia Medical Examiner* for February, 1842, says: "In the year 1812-13 I attended courses of surgical and anatomic lectures delivered before the medical school of Brown University by William Ingalls, then the professor of anatomy and surgery in that institute; being subject myself to this infirmity (strabismus) Dr. Ingalls took frequent opportunities to explain to me the method of its surgical cure —he did this by dissection of the eye itself—giving an explanation of the power and disposition of the several muscles appertaining to that organ, and showed me how by a division of one or more of them the eye might be brought to its proper place. In my own case I know he proposed to divide the rectus internus. So strongly was I impressed with the practicability and success of this operation that I strongly urged my father to permit me to submit to the operation; but upon the nature of the operation being explained to him he declined the permission because he feared the effect might be to turn the eye the other way."

If this be considered insufficient grounds for awarding the claim of priority of discovery, I quote from Friedenwald's history as follows:

In the American Appendix to the second edition of Cooper's "Dictionary of Practical Surgery," edited in America in 1844 by David Meredith Reese, who in 1842 was professor in Washington University of Baltimore, we find a very curious reference to Professor Gibson under the head of strabismus: "It appears from the Institutes of Surgery that Professor Gibson attempted the cure of strabismus by dividing the recti muscles of the eye, precisely as now practiced, some twenty years since, in Baltimore. Soon after he repeated it unsuccessfully in Philadelphia, in several cases, and was induced to abandon it by unfavorable opinions expressed on the operation by Dr.

Physick. He, however, inculcated the propriety of the operation on his class many years since, and Dr. A. E. Hosack of New York, then one of his pupils, distinctly recollects Dr. Gibson's expressions of confidence that the operation would ultimately succeed. I had no little difficulty in finding the reference to which Dr. Reese refers. The first five editions of Gibson's Institutes of Surgery (published between 1824 and 1838) contain no chapter devoted to strabismus. Its treatment consists almost entirely in a paper written by Charles Bell and sent by him to Gibson. In this chapter the above reference is likewise not to be found. It is only in the sixth edition, published in 1841, that we find the reference. It is of such importance that I shall give it in detail. On page 375 Gibson states that: "In the year 1818, while practicing my profession extensively in Baltimore, the late Mr. B. J. consulted me about his daughter, a child of eleven or twelve years of age, both of whose eyes were directed very much inwards, and were thereby greatly deformed by a squint. I advised a pair of goggles, so contrived by having a small opening in the center of each, as to oblige the child to direct the cornea to these openings, and by perseverance for several weeks, succeeded in diminishing the deformity but not effecting a cure. In the course of my visits the child remarked at different times that her eyes felt as if tied by a string. Struck with this observation, and conceiving the disease might depend on shortening of the internal rectus muscle, I determined, the first opportunity, to try the result of division of that muscle; and as the friends of my young patient were unwilling the experiment should be first tried on her, I selected a hospital patient, and after some difficulty in fixing the eyeball and cutting the muscle across, succeeded in restoring the eye partially to its natural situation. On two other patients I repeated the experiment, without much better success, but on dividing a muscle in a fourth patient, after my removal to Philadelphia, the eye was so completely turned to the opposite direction as to bury the cornea beneath the lids and create a much greater deformity than had previously existed. On showing the patient to Dr. Physick, he advised the experiments to be abandoned, as likely to be followed by very unfavorable results. I mention these circumstances, not from a desire to receive credit as an inventor or to detract from the claims of the distinguished surgeon with whom the modern operation of strabismus originated, but merely as a curious fact, calculating to show the importance of not laying aside processes apparently founded on correct principles, simply because we are at first foiled in our attempts to execute them. How much benefit would have resulted to the community if I had followed up my operations until I ascertained the proper mode of correcting them, or how much injury I might have inflicted on individuals by perseverance in the attempt, I shall not stop to inquire. It is sufficient for me to announce the fact—which I have no doubt could be easily substantiated by many pupils who attended my early lectures, some of whom have indeed already proffered their testimony—without being over-solicitous, in setting up a claim as an inventor, of exposing my awkwardness and perhaps want of knowledge of the principles that should have guided me in following out the practice I had attempted to institute.

The Professor Gibson referred to is William Gibson, born in Baltimore in 1784, educated in Edinburgh, professor of surgery in the University of Maryland from 1812 to 1819, and in the University of Pennsylvania from 1819 to 1854. Besides this claim of the discovery of the operation for strabismus, Hirsch tells us that Gibson described as early as 1819 (see the *New England Journal of Medicine* for that year) the following original operation for the removal of cataract:

The iris was in the first place dilated by the application of atropa belladonna. A common sewing needle, slightly curved and armed with a single thread of silk, was then passed through the tunica sclerotica about two lines from the cornea where the couching needle is usually introduced, through the opaque lens and out of the opposite side of the cornea, at a point corresponding to the one at which it was introduced. The silk being drawn through, and the ends cut off, a single thread was just left passing through the ball of the eye, and acting on the diseased lens in the manner of a seton. It was feared that serious inconvenience might arise from the irritation produced on the tunica conjunctiva from the excessive sensibility of this membrane. Fortunately, however, neither this nor any other accident intervened, and at the end of ten days, in both cases, the diseased lens had disappeared, and in its place the silk was distinctly seen passing like a bar across the pupil of the eye. The silk was withdrawn and in a few days the vision was restored. In the third and last case in which this operation was performed it failed, in consequence of the iris being wounded. This caused such an inflammation of the organ that it was deemed proper to withdraw the seton at a very early period. This accident was attributed to not using the belladonna.

Roosa in his text-book calls attention to the fact that Professor Dewey of Union College (1849) has a strong claim to the recognition as the discoverer—prior to Donders—of hypermetropia and called by him neomacropia. Blackman's operation for the relief of spasmodic entropion, said to be superior to Himly's, is described in the *New York Lancet* for June, 1842.

The first periodical printed in English and devoted to the eye and its diseases is the Royal London Ophthalmic Hospital Reports, the first number appearing in 1857. Five years afterward (in 1862) the second one, the *American Journal of Ophthalmology,* edited by Julius Homberger and published in New York, survived two years.

This list of American publications containing original discoveries would be incomplete if no reference were made to the first Canadian treatise on the eye, a work of 517 pages, edited by Henry Howard of Montreal, in 1850. In it, among other interesting matter, will be found an illustrated description of the author's method of removing cataract with an "arrow-head" knife.

It seems strange that the invention of the ophthalmoscope should have produced so few English and American atlases reproducing fundus findings. The early maps and atlases of Wardrop and Dalrymple, reproducing mostly external diseases of the eye, furnish numerous and beautiful examples of the engraver's art, wrought in a style that puts to shame many a more pretentious volume of recent years. If we stretch a point and except a small and badly made book by the British ophthalmologist, Jabez Hogg, issued in 1862, no English atlas falls within the time limit of this paper.

One of the most marked and beneficent literary results of the use of the ophthalmoscope was to greatly abbreviate the long vocabulary and to restrict the nomenclature of ophthalmology, generally because the many so-called functional diseases were shown to be due to demonstrable lesions, and many so-called diseases were found to be symptoms merely, often of several widely differing lesions. The long-winded chapters and monographs on "amaurosis and amaurotic affections" practically disappear from literature. Ophthalmologists were able to smile with Walther, who described the amaurosis of the pre-ophthalmoscopic era as a condition in which "both the physician and the patient were blind."

May I, in closing, draw your attention to the excellencies of William Mackenzie's text-book (1833-1855). Let us take, for example, the edition containing addenda, notes by Addinell Hewson and the Wharton-Jones prefix—the second American edition—published in Philadelphia, 1855. I do not believe that there is to-day, in any treatise, a better account, from a clinical standpoint,

of the ordinary external diseases of the eye. The two decades of Mackenzie's activity bred a school of clinicians whose like, having in mind their necessary limitations, we have not so far seen and may never see again. In a sense—a narrow sense perhaps—the introduction of objective means of examination seems to be coeval with a diminution in our powers of observation. The lessons to be learned by simple inspection of the eye and of the patient, as well as by the careful weighing of the evidence afforded by his symptoms we have exchanged for such signs as are demonstrable by the ophthalmometer, the microscope, the ophthalmoscope, the retinoscope and the use of magnifying glasses with the oblique and other forms of examination. Far be it from me to underrate the value of these means of diagnosis; I merely wish to point out that the text-books of half a century ago were, in the main, characterized by what seems to me to be lacking in modern treatises—a proper regard for the purely clinical aspects of ocular disease.

Another fact that must strike the reader of the best of the mid-century treatises is that if a fairly large percentage of the population now consult the optician instead of the ophthalmologist the profession is pretty much to blame for the practice. This, for example, is what Mackenzie says: "When a near-sighted person wishes to be fitted with concave glasses, the simplest and surest plan is to try a series of them, at an optician's shop"—and, sure enough, the short-sighted person has continued to "try a series" ever since!

One might multiply indefinitely the observations which every reader of the writings of the fathers in ophthalmology would be likely to make. They do not differ, let us hope, from the acknowledgments which our children's children will make of our patient strivings after truth, of our undoubted accomplishments and of our hopes for the future, nor can we hope to escape at the same hands criticism of our primitive methods, our mistaken pathology and our ineffectual therapeutics.

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RENAL INSUFFICIENCY IN THE TROPICS.*

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Without touching on the theories of Garrod and Latham on the one side and Haig and his followers on the other as to the origin, effect and disposition of uric acid, which theories prove ever debatable, the writer of this paper passes to the more simple and practical consideration of a certain condition of the blood which conclusively announces the fact that the kidneys are not performing their function and that the condition is one of danger. For the purposes of this essay the cause of "this certain condition" will be referred to as "urinary solids."

Renal insufficiency is failure on the part of the kidney to perform its function. A more practical title to this paper would be, a plea for systematic instruction in the use of water in the tropics. Lack of volume to the circulation means renal insufficiency sooner or later, whether the failure in function on the part of the kidneys be from overwork or from inactivity. Physiologists, writers on practice of medicine, military hygiene and on diseases of the tropics agree that water is an essential proximate principle, and that the normal animated being requires in its economy water in the proportion of 75 per cent. of the bodily weight in order to maintain health, but no one of the writers has offered an emphatic word or a practical word of counsel as to how much, when or how water should be consumed so as to properly and faithfully discharge the function of maintaining bodily health.

It can not be assumed that all who thirst will drink; this is true only of the lower animals who are guided instinctively to self-preservation, and true only of those of the higher class of animal, man, who have recognized the importance of obeying nature's calls rather than sacrifice the benefits to be derived from her wisdom, to pleasures and to the seeming necessities of life's vocations. The business man is on guard as to his stock in trade; the worry from watching employes and his other anxieties of the busy forenoon crowd back into insignificance nature's appeal for water at regular intervals. Not until the fever heat in the throbbing heart of finance has cooled from its daily rise does the man on 'change listen to the call for water to supply the waste incident to the rapid combustion that has taken place; water to flush the channels of the debris of conflagration. The farmer building his fence, digging his ditch or plowing his crop is too much absorbed in visions of prosperity and air castles to stop now and then to replace the loss sustained by sweating; he will stagger a while longer under his burden, it will soon be noon and then he can drink with unlimited satisfaction from the old well. All procrastinate when the instinctive call for water appeals to them, and each readily puts it off to a more convenient season, which will be, usually, the next meal hour, then each takes more water than is wholesome, either for the digestive process or for nerve functions. These classes have not been taught.

When the instinctive call for water appeals to the soldier he would probably respond, but under present discipline he is forbidden. No attempt is essayed here to criticise, but attention is simply invited to the fact that there exists among those on whom the army unit depends for sanitary instruction an almost decided trend warning the soldier to leave water alone as a dangerous element in the camp and field; simultaneously, the same men may write chapter after chapter on the important theories of obtaining pure water, but never a line as to how much of it to drink, or when or how. One writer on military hygiene advocates "the habit of rarely drinking between meals" (Munson), and further on in his magnificent work mentions gastro-intestinal disorders due to drinking water at meals. Official documentary hygienic guides direct the soldier to "drink as little as possible even of cold water." They say: "Experience teaches the old soldiers that the less they drink on the march the better, and that they suffer less in the end by controlling the desire to drink, however urgent." There is no reason given for this advice except that "Experience teaches the old soldier." If the soldier can not drink water in safety between meals, or at meals, or on the march, what must he drink, and when must he drink, now that the canteens are closed?

The score of authors on military hygiene and on tropical disorders appealed to on this subject, either by silence or by feeble assent confirm in a measure the water abstinence dogma. Only one writer encountered lays stress on the importance of keeping the system supplied with water as fast as it is dissipated. Colonel Smart, in his paragraph on sunstroke, advises the halting of troops on the march every hour in order to readjust equipment and replenish water supply. If this eminent authority so advises for troops in the temperate climates, how much more important for obvious reasons are frequent halts on the march for troops in the tropics. The field and line officers of the old "establishment" are familiar with the old dogma, and many of them here in the tropics insist on punishing themselves and the men with thirst and its sequels.

Since pitching camp on La Loma line in the fall of 1899, and on for two years in the field in the provinces of Union, Benguet, Laguna, Morong and the islands of Romblon, Tablas and Samar, attention has been drawn to a heterogeneous accumulation of symptoms among the sick that could indicate no other disorder than auto-intoxication from renal insufficiency, faulty assimilation of food playing its part. The daily exhausting practice marches for green troops, the reconnaissances, the expeditions and the fatigue work to which the men were subjected in steaming jungles, rice fields and mountain trails, together with their negligence, ignorance or fear, from one cause or another, of the drinking of water, would invariably yield to the field hospital a daily contingent of disorders which would seem not so much at-

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tributable to the popular adversary "malaria" in its several phases and other alleged ailments as primarily due to auto-intoxication from renal insufficiency. Men on days following such exhausting duties would present themselves, inviting attention to some of the following disorders: rheumatism, fevers, cardiac disturbances, headaches, urethritis, non-specific and recurrent specific, cystitis, skin eruptions (suddenly appearing and later developing into classified dermata, many with glandular and suppurative complications), melancholia, nostalgia, hysteria, neuralgia and well-defined dementia.

According to Munson, Manson, Moore, Nielley, Cullimore, Rattray, etc., the disorders for which the tropical climate seems responsible (excepting infectious or endemic diseases) are as follows, and in fact no other than those mentioned above, the symptoms of which can be shown to be those of uremia due to excessive loss of body fluids by the skin or to consequent suppression of the excretion of urinary solids.

1. *Nervous Disorders.*—Insomnia, somnambulism, irritability of temper, inability to concentrate thought, neuralgia, hysteria, dementia, etc., and the nerve suffering from what Dana calls "nerve desiccation" acute.

2. *Gastro-Intestinal Disorders.*—Dr. Munson says, due to "great loss of bodily weight by sweating" there is "diminution of saliva, mucus, gastric biliary and pancreatic juices; dryness of the throat and fauces, exaggeration of thirst, weakness of appetite, impaired digestion, gastric fulness after eating and habitual constipation." What more urgent appeal is needed for water?

3. *Cardio-Vascular Symptoms.*—Quoting from the same writer, "there is low heart beat, lowered arterial tension, due to loss of fluids by increased perspiration favored by relaxed capillaries."

4. *Cutaneous Eruptions.*—To what extent the skin is capable of excreting urinary solids is a moot question, but clinical observation would indicate that its power in this direction is by no means compensatory for the inactivity of the kidneys in the tropics. The skin in its unbridled effort to throw off effete material becomes excrement-sodden, so to speak, and in this irritated condition makes a favorable nidus for parasitic and other enemies of the skin. Bulkley has discussed renal insufficiency in its relation to skin affections and no further mention is deemed of need here.

5. *Genito-Urinary Disorders.*—Due to the "enormous amount of sweat, often amounting to four or five pounds a day—scanty, high-colored and highly acid urine" (Munson). Dr. Munson notes as the result of increased perspiration in the tropics the diminished amount of urine excreted as being one-third only of the usual amount in the temperate climates. He quotes Mourson and Eijkman as to the diminished amount of urinary solids excreted, but no particular stress is laid on the prevention of the effect this irregularity may have on the system in producing or exaggerating any of the disorders for which the tropics are peculiar.

In April, 1900, out of two companies in a three-day expedition from Paete east, in Laguna Province, through jungles, marshes and hills, thirty-seven of the one hundred and eighty men who had become hardened and well disciplined by three months of campaigning in the mountains of Union and Benguet provinces, were rendered non-effective in a seven-mile march on the last day of the expedition with the following disabilities: "Melancholia, hysteria, painful and scanty micturition, severe headaches, acute rheumatism and fever, 30; sprained ankles, 3; gastro-intestinal disorders, 4. (From field diary.)

Six of the thirty had a return of an erstwhile quiescent gonorrhea, and two exhibited a non-specific urethritis. The march was a forced one, and the men were specially denied the privilege of halting for water more than twice in the six-hour march, it being deemed by the commanding officer a breach of a time-honored custom to drink water while on the march.

In May, 1900, a stalwart private of "E" Company, 29th U. S. V. Infantry, after having done an unusually fatiguing tour of guard duty one day in the broiling and steaming streets of Navotas, went to bed early that night, and later, jumping up screaming in his sleep, rushed the length of the barracks and hurled himself through the window to the stone floor below, sustaining a compound complicated fracture of the left elbow. On the morning after the accident, before leaving for Manila, he stated that he recently noticed no ailment save scanty and painful urination. He died of "gas bacillus" poisoning in Manila.

Lieutenant ——, U. S. Army, a faithful disciple of the water abstinence dogma, an energetic, untiring and persistent pursuer of the warrior class of Filipino, reports that in last June in an unusually fatiguing forced march, he suddenly became nauseated by pain in the left testicle, became dizzy and unable to march. The following morning a well-defined urethral discharge was present accompanied by an enlarged and painful testicle. The surgeon on duty pronounced the trouble a specific one. The officer had never contracted a venereal disease and so applied for treatment in Manila. The laboratory examination revealed a non-specific urethritis. A well-developed hydrocele is the present sequel. There can be little question that the cause of such disturbances is no other than loss of body fluids from excessive perspiration, the exciting cause being uremia or renal insufficiency.

Up to last April no facilities were offered the writer for making urinary analyses. At the Division Hospital at Los Banos (Hot Springs) ample opportunity and material have been afforded for investigation and for concluding that the many noted cases encountered in the field simulating phases of malaria, heatstroke, rheumatism, etc., were primarily caused by renal insufficiency. The first one hundred cases admitted to the hospital at Los Banos were taken to test the difference in the amount of urinary solids excreted in the Philippines and that excreted in the temperate climates in the same body weight. In the following one hundred cases only one was found to exhibit true casts in the urine:

Number of patients.	Weight.	Total solids; grs. Normal.	Smallest amount of solids passed in 24 hr.; grs.		Greatest amount of solids passed in 24 hr.; grs.	
			On admission.	On return to duty.	On admission.	On return to duty.
2	120	974	145	560	462	806
56	130	1028	156	660	701	1000
20	140	1078	415	665	759	1020
15	150	1150	209	760	957	1050
5	160	1198	363	960	1089	1120
1	170	1237	900	1200	. . . . .	1200
1	200	1330	1023	1270	. . . . .	1270
Aver'ge	167	1142	458	865	753	1063

The cases were chronic forms of rheumatism, venereal diseases, skin diseases and neuroses. The results in the above table show a remarkably low excretion of solids on admission to the hospital, and this, too, while the patients were in a passive condition, more favorable for

renal activity. The increase of solids excreted on return to duty commends the idea of systematic instruction in the use of water, for no other treatment was employed.

The sum of the symptoms of the above classified disorders due to meteorologic or tropical peculiarities is equal to or identical with the sum of the symptoms of the gout and uremia of the text-books, and these symptoms are but those of auto-intoxication due to renal insuffiency, with or without structural change in the kidney. Faulty assimilation playing its part.

Garrod, Luff, Latham and others with one theory, and Haig, Bouchard, Jelks, Bulkley and others with another theory, have written at length and in detail of the multiform annoyances of renal insufficiency, its relation to diseases of the skin, gastro-intestinal disorders, nervous phenomena, cardio-vascular symptoms with and without structural change, and, although they do not come out distinctly and declare the highly important value of systematic use of water, one can plainly see that it is deemed by them the "sheet-anchor" in prophylaxis and in treatment. In the one hundred cases cited, as having been observed in the Hot Springs Hospital at Los Banos, no other diuretic than water was employed; for, indeed, no other was needed to bring about the almost normal excretion of urinary solids, noted on the return to duty of the patients. It should here be explained that the judicious use of hot baths and vapors in this connection in no way impeded the activity of the kidneys. On the contrary, the hot saline water on account of being rapidly assimilated when taken internally, and on account of its benign and certain action on the nervous system by the centripetal pathways, when applied externally, caused an equilibration in the circulation and an almost normal renal emunction.

It is not the purpose of this paper to offer a plan of instruction in the use of water for the prevention and treatment of diseases, although the writer has decided views on the subject. If attention is attracted to the importance of such a plan the object of the paper has been accomplished. There can be no doubt in the minds of surgeons who have served with troops in the exhausting climate of the Philippines that from a practical standpoint much suffering and sickness on the march and following the march can be averted by a regulated and uniform use of water internally and externally. The regulation of such uses of water in the field and in camp can be made practicable. The experience of the writer with the soldier in the field and in garrison inclines him to believe that the enlisted man who takes any interest whatever in being a soldier is never slow to take common-sense advice to the letter when it concerns his diet, clothing, general personal welfare, etc. The enlisted man pays little heed to advice or directions given in a generalizing way. He is neither impressed nor interested. Advice to him must be kindly persistent, special and to the point. Line officers approached on the subject say that it is doubtful whether soldiers can be taught to use water in any systematic way. Why not? The gawky woodsman, the shambling farmer lad and the Bowery "slummer" are, by discipline, gymnastics, foot and arm manual, and the fear of the guard-house, readily transformed into soldiers with grace and action; are made proficient in the care of their clothing and persons, are made proficient in first aid to the sick and wounded; they are taught how to sleep and how to eat: why can not they be taught how to drink water for health? Line officers say that they have watched soldiers here in the Philippines on the march and have observed that those who drank water were invariably the first to "fall out"; that those who drank water wanted to drink all the time; that the more they would drink, the more they would sweat; that they have seen them approach a well or stream and drink cupful after cupful and fall with cramps and be unable to proceed, thus proving an impediment of serious nature. So has the writer seen just such exhibitions on several occasions; he is making now a plea for instruction of those who do not know.

CONCLUSIONS.

1. Whether the systemic disturbance causing the usual disorders peculiar to the tropics be uric acid or faulty metabolism, or both, the kidneys in the tropics do not perform their share of the work of emunction.

2. The reason for this renal insufficiency in the tropics is that the tide of water (the necessary solvent vehicle for urinary solids) pours through the skin so rapidly that the volume of circulation is so correspondingly diminished that waste products are stranded in those tissues most favored by the weakened flushing force for stasis.

3. The remedy is the internal use of water as fast or faster than it is wasted by the skin in order to force the kidneys to work and to maintain normal volume in circulation, and the external use of water and sun baths systematically for their toughening and contractile influence on the skin.

Clinical Report.

A RARE CASE OF INSANITY.

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A year ago there came under my observation a case which I think of sufficient interest to report. It was that of a woman pregnant two months, the mother of three children, all living and in perfect health. Up to this time she had always been well. To all appearances her case the first days resembled a typical case of hysteria, but in a few days it was easily recognized as a case of dementia. As gestation increased so did the insanity. In the latter months she passed almost into a condition of stupor, talking to no one, refusing all food and did not even take care of her person; in fact, she had to be cared for as though a baby. She presented a pitiable sight and became very much emaciated. Labor came on at the usual time and was accompanied by hydrops amnii and complete uterine inertia. The usual oxytocics had no effect whatever.

I delivered her with forceps of a seven-pound boy, perfect in every way. After delivery I gave her no more medication. She made an uneventful and rapid recovery and at this writing is in perfect health. At no time during the disease did she become violent. All medicines usually used for such cases proved futile.

I have seen several cases of puerperal mania occurring after confinement, but this is the first one under my observation coming on at such an early period of pregnancy, lasting so long and terminating so favorably. The urine was repeatedly examined and was found normal; as were also the heart and other organs.

Summarized Conclusions of Original Articles.—The Italian *Riforma Medica* publishes as standing matter on the cover an urgent appeal to authors of original articles to summarize their final conclusions as "useful to the reader and adapting the article for easy diffusion in other periodicals." THE JOURNAL has always advocated this principle, and rejoices to see that it is becoming more universal. A model in this respect is the *Rivista di Freniatria*, also an Italian publication, which not only gives the final summary but has each division of the subject summarized in numbered conclusions before reaching the final ones. Certain German quarterlies also follow this custom. An article thus summarized is easily reviewed and abstracted, and the exact ideas of the writer are comprehended at a glance, and are worthily presented in the brief abstract.

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OPERATION FOR CHRONIC NEPHRITIS.

During the past year there has been a great deal of interest in this subject, particularly since the appearance of Edebohls' paper,[1] in which he claimed eight complete recoveries from various forms of chronic Bright's disease at least one year after decortication of the kidney. After report of such brilliant results several operators undertook the procedure, but with less satisfactory results than Edebohls reported. It seems certain, however, that operative measures relieve or cure certain cases of nephritis, and it is a highly important question to determine just what classes of cases are suited for intervention.

From a careful study of a series of 17 cases which he has operated on for various forms of chronic nephritis, Rovsing,[2] professor of surgery in the University of Copenhagen, attempts to formulate some rules as to the proper treatment in such cases. He divides the cases into aseptic and infectious nephritis. In the aseptic cases he found that diffuse parenchymatous nephritis was not influenced by operation. A case which he classed as chronic glomerulo-nephritis recovered after operation, he believes, more from rest in bed than from any favorable result from the operation. In diffuse hemorrhagic nephritis there is much danger in operating and the results are not satisfactory. In four cases of interstitial nephritis and perinephritis fibrosa occurring with uric acid and oxalic acid diatheses his results were satisfactory. Operation is frequently undertaken with a diagnosis of stone in the kidney in such cases and gives relief without any stone being found. The severe pains which are present in these conditions he believes indicate operation. Pain always indicates tension within the kidney capsule, it does not matter what form of nephritis exists. But the most important group of cases is that caused by some form of infection. Eight of his cases were of this character and the condition was only discovered after most painstaking examination. Urine obtained under aseptic precautions should be accurately examined; chemically, microscopically and bacteriologically in every case, whether we suspect that we have to deal with an infection or not. In case pathologic constituents are found, cystoscopy and catheterization of the ureters should be employed. In his cases Rovsing found infections of the urine from the *Staphylococcus aureus, Staphylococcus albus, Streptococcus pyogenes* and *Bacterium coli.* The entire clinical picture did not differ in these cases from that in the aseptic forms of nephritis. Neither was there any difference in the chemical constituents of the urine or of the appearance of the kidney when it was exposed. The results of operation in these cases were very much more satisfactory, however, than in aseptic cases, and Rovsing believes that his cases show definitely that unilateral chronic nephritis may be of infectious origin; that it may affect a greater or smaller part of the kidney, or that we may have a double partial infectious nephritis. Stripping off the kidney capsule, which gives such favorable results in cases of aseptic interstitial nephritis with perinephritis and severe pain, also has a favorable influence on inflammatory processes. In hemorrhagic cases he believes that splitting the kidney will give favorable results in the milder infections, such as by the *Bacterium coli,* but it is dangerous in the more virulent infections. Resection of the diseased part in case of local infectious nephritis which entirely resembled chronic aseptic nephritis led to cure in two of his cases.

Further investigation is needed to prove the value of Rovsing's suggestions. Up to this time infection with ordinary pyogenic bacteria has not been considered such an important etiologic factor in cases of chronic nephritis, though it might have been suspected that the cases following scarlet fever, erysipelas and other forms of infectious disease were of this character. The careful study of this class of cases which Rovsing suggests, if carried out by competent observers, could not fail to give important results. If further study of such cases proves that we can find such definite indications for operation as are above suggested a great advance has been made and undoubtedly many lives will be saved. The skepticism of many surgeons as to the advisability of operating in every case of this kind seems warranted from our present knowledge, and until definite grounds have been shown from more careful study of large series of cases by competent men, routine operation for chronic nephritis in any case can not be considered an established surgical procedure.

1. Medical Record, Dec. 21, 1901.
2. Mittellungen aus den Grenzgebeiten der Medizin und Chirurgie, 1902, vol. x, p. 288; see THE JOURNAL, May 22, 1902, p. 796.

CLINICAL PARATYPHOID FEVER.

It seems clear now that there must be accepted a group of affections very similar to typhoid fever clinically, yet due to an essentially different etiologic factor. The cases of so-called typhoid fever affecting about 5 per cent. of all the patients presumed to be suffering from that disease in which no Widal reaction can be obtained, either during the course of the fever or the convalescence, are, in the light of recent investigations, due, not to the Gaffky-Ebert bacillus, but to a microorganism of the colon bacillus family, having many morphologic and cultural similarities to the genuine *Bacillus typhosus.* The work done in elaborating distinctions between these closely allied bacillary groups which has occupied so many minds for so many years is now to have its reward, for certain at least of the colon

family are to be recognized as playing a distinct specific pathologic rôle in the enteric fevers of human beings.

It is not surprising that there should be an addition to the number of specific infectious fevers. Their number has grown constantly with the increase of diagnostic acumen and methodic observation. A century ago measles was not entirely differentiated from smallpox and diphtheria was as yet utterly confounded with scarlet fever. In recent years another specific infectious fever, German measles, has been added to the scarlet-fever-measles group of diseases, and a fourth affection, the so-called fourth disease of Dukes, is vindicating for itself a place beside the other three. It would be surprising, indeed, if further specific infections were not differentiated, for considering the large number of bacterial species known and recognized, only a very few (less than twenty) have been found to be pathogenic for man.

The point of main interest for the general practitioner is the possibility of the clinical recognition of these newly-separated affections. Paratyphoid fever is not a unit, but probably a disease group containing several members. The differentiation from each other and from true typhoid fever is the problem of the present decade. That this will not be easy without the refinements of bacteriologic diagnosis is clear. Paratyphoid fever may run a course so deceitfully like typhoid as to make clinical differentiation apparently hopeless. In a case cited by Dr. Longcope,[1] there was the febrile course of typhoid, rose spots, an enlarged spleen and the diazo-reaction, and two relapses followed the primary attack, while during convalescence from the second symptoms of thrombosis in the left leg developed. It is evident that only the absence of the Widal reaction and the discovery which was actually made in this patient of a paracolon bacillus in the urine, feces and rose spots could furnish proper basis for the differentiation of such a case from true typhoid fever.

While some cases are thus so completely similar as to make assured differentiation by clinical methods impossible, typical cases of paratyphoid fever usually present distinctive features that will at least arouse suspicion of their true nature. Dr. Nathan Brill,[2] in his paper before the New York State Medical Association at its last annual meeting, compiled a list of certain differences between these affections that have been noted by many observers. The incubation period of a paratyphoid fever is apt to be shorter than in true typhoid. The week's malaise is replaced by three or four days of discomfort, and then, instead of the gradual steplike rise of temperature, there is usually a rather sudden development of fever up to 104, or even higher. The sensorium is prone to be duller than in true typhoid and this apathy comes on earlier in the illness. This will call for a retention of some hint at least of the old name for the new affections, since it is the apathy of enteric fever that is expressed by the Greek root from which the name typhoid is derived. The look of pain in the face is usually greater than in true typhoid and headache is more complained of. Constipation rather than diarrhea is a prominent feature. Paratyphoid fevers are, as a rule, shorter in their course, and after ten or twelve days there is a rapid lysis followed by more satisfactory convalescence.

These differential points constitute the clinical basis on which suspicions of paratyphoid fever must be aroused, especially in isolated cases under circumstances where the Widal and other serum reactions can not readily be obtained. It is not improbable that careful observation may disclose other diagnostic characteristics which will eventually make the clinical recognition of the new affections possible. In the meantime, a most interesting field for investigation lies open for the general practitioner.

1. Am. Jour. of the Med. Sciences, August, 1902, p. 209.
2. JOURNAL A. M. A., Nov. 8, p. 1205.

PERIPHERAL NEURITIS AS A COMPLICATION OF GONORRHEA.

That infection with the gonococcus may extend by continuity of structure from the site of original inoculation has long been known, but it is only within comparatively recent times that the occurrence of dissemination through the blood stream has been recognized. The articular or synovial complication formerly designated gonorrheal rheumatism must be considered as having this latter origin, although it has not been established whether it is due to the invasion of gonococci or to the action of toxins elaborated by these. The endocarditis that has been observed and carefully studied in a number of instances has been shown to harbor the microorganism itself.

A number of disturbances referable to the nervous system have also been described in connection with gonorrhea, and various explanations for their occurrence have been offered. Thus, paraplegia with wasting of the affected muscles in association with gonorrhea has been attributed to reflex influences, to myelitis secondary to ascending neuritis, to an impression on the trophic centers in the spinal cord and to specific gonorrheal infection. Myelitis and cerebrospinal meningitis have been reported in the same connection, and gonococci have been found in cases of the latter in the fluid obtained on lumbar puncture. Cerebral embolism, with hemiplegia and aphasia, may occur as a complication of gonorrheal endocarditis or phlebitis. With a knowledge of the fact that the activity of the gonococcus results in the production of toxic substances it can be readily understood that any portion of the nervous system may suffer in consequence of the effects of the latter.

In this way there may be produced a variety of disturbances attended with changes at the one extreme so slight as to be beyond detection with our present means of examination, and at the other extreme of the most marked character. If the lower segment of the motor tract is affected there will be developed the symptoms of poliomyelitis or polyneuritis, accordingly as the ganglion cells in the anterior horns of the spinal cord or the

peripheral portion of the motor neuron is involved; both may even suffer together. Two extremely interesting cases belonging in this general category have recently been placed on record by Dr. T. R. Glynn.[1] The one occurred in a man, 48 years old, who presented, in conjunction with a urethral discharge in which gonococci were found, weakness of the lower, and later also of the upper extremities and of facial and ocular muscles, with abolition of reflexes, muscular wasting, degenerative reactions in some muscles, paresthesia, impairment of sensibility, involuntary discharges from the bladder and the bowel, delirium, delusions, acceleration of pulse and respiration and bed sores. Improvement set in in the course of a month and was slow, but it progressed to complete recovery. It is believed that in this case the entire motor neuron, but especially its peripheral portion, was injuriously affected by the toxin of the gonococcus, or possibly by that of an associated pyogenic coccus. The second case occurred in a young man, 17 years old, with gonorrhea of two months' standing, in whom there developed pain, tingling and weakness in the lower extremities, with abolition of knee-jerks and plantar reflexes, and from all of which recovery ensued.

If these cases be accepted as authentic instances of the complication of which they are reported as illustrative—and there is no sound reason why they should not—they add one more to the already numerous list of infections at times responsible for the development of polyneuritis.

1. London Lancet, Sept. 27, 1902, p. 860.

THE CONSUMPTIVE'S CRIME.

According to a modern school of thinkers crime is practically a disease and the criminal should not be punished but should be cured. As a converse to this we have a large portion of the general public practically making disease a crime and cutting off the possibilities of cure while applying the punishment. Not long since a consumptive made nearly the round of the numerous hospitals of Chicago—according to the newspapers—and found himself barred from all. The only resource was to go as a pauper to an attachment of an almshouse in the suburbs.

This is not a unique experience; it has occurred in other cities, and the situation seems to be becoming aggravated. The medical profession has its responsibility for the state of affairs; it has for years been teaching the contagiousness of tuberculosis; health officials have promulgated the idea and just now the public are taking it up and acting accordingly. The unfortunate sufferer from pulmonary disease is beginning to find himself an outcast, a *persona non grata* even among those with whom he formerly associated; he is forbidden the health resorts where he once found benefit, and in many other ways is made to appreciate the fact that what was formerly only a misfortune has now become what, in its results as regards its estimation by the public, is practically a crime. This is not too strong a statement; it is amply warranted by actual facts. A well-known pulmonary specialist tells that while he was camping in Colorado not long since he had to reply to an individual who was objecting to the vicinity of a consumptive by asking him whether he wanted the man taken out and shot, that being the natural available alternative in the case. It is only a few months since there appeared in one of the leading medical weeklies[1] an article by a physician not only insisting on the danger of contagion, but also charging consumptives as a class with a deliberate criminal tendency to spread their disorder.

THE JOURNAL has always maintained that the abject fear of tuberculous contagion was needless, and with reasonable and perfectly practicable precautions there is no danger in even the intimate association with consumptives. The experience of well-managed consumptive hospitals and sanatoria gives ample proof of this. Moreover, even without these precautions, but with otherwise good sanitary conditions, the danger is by no means as excessive as is commonly stated and supposed by the average layman whose fears have been aroused. In Great Britain, and in this country so far as statistics are available, the mortality from tuberculosis had steadily diminished with the improvement of the standard of living and better sanitation long before the general recognition of the germ and the present agitation for special prophylaxis of the disease.

The prospect of the complete eradication of tuberculosis, so much talked of just now, seems to us an *ignis fatuus,* perhaps of use as an ideal that will be always ahead of us, but not justifying measures that seriously diminish the aggregate of human comfort and happiness. There is no doubt, on the other hand, that by proper methods of increasing the individual resistance, not neglecting rational antisepsis against the germ, we can greatly diminish the mortality and make consumption, not the chief, but only one of the many unavoidable causes of the death which is the inevitable fate of us all. When it does come in this way let us make it easier to the victim, and not be adding to his misery by our selfish and irrational fear. We can also teach the public that the tuberculosis germ has by no means the fatal significance that they are learning to attach to it, that, while probably few if any of us escape it altogether, serious consequences result to only a small proportion of the whole. It is, when we consider the results, criminal to send out the misstatement that one-fifth, or even one-seventh, of the mortality is due to this disease. Probably in future years, and it may be in the near future, tuberculosis will be accounted only of secondary importance as a cause of death; it may even be, like other former scourges of the race at the present day, only a comparatively rare and negligible ailment, but if this is to be it will be through rational and humane methods and not reckless exaggeration and stimulation of insane public fears with their natural result of brutal inhumanity to the unfortunate.

1. New York Med. Journal, Feb. 8, 1902.

EDUCATIONAL TOURS FOR MEDICAL MEN.

For several years tours to the various watering places and springs of France have been organized by the physicians of that country, thus allowing the participants to combine pleasure and instruction. Last summer two similar tours were planned in Germany, one embracing the saline springs of middle Germany, and the other the watering places on the North Sea. The latter tour began at Hamburg, and the tourists returned after spending eleven days at several of the most prominent resorts. They were carried on one of the steamers of the North Sea Line, which had been placed at their disposal. The men who planned and directed this tour have edited a book of 178 pages containing articles on the various resorts visited and on the influence of a marine climate. Many of the names occurring in the book are well-known writers and teachers.

Similar tours in Germany are to be made annually, and German physicians seem ready to follow the example of the French in this custom. In connection with the meetings of the medical societies in America and England trips have been planned to points of interest adjacent to the places of meeting, but these side trips have usually been for pleasure alone, any educational value attaching to them being secondary or accidental. In a few instances excursions have been planned by means of which parties of physicians have been enabled to visit and become familiar with the advantages of certain health resorts, but this has not been undertaken in any such a systematic way as is being done in continental Europe.

Very frequently medical men advise patients to go away from home for the benefit of their health, but usually the physician has little personal knowledge of the places to which the patients go, and he is often unable to give any but the most general directions as to what they should do when they reach their destination. Patients are sent to springs of various kinds because the waters are said to be good for certain diseases, but very often the physician is unacquainted with the composition of the water in question and with the way in which it is supposed to exert its influence. At such places one may see persons drinking powerful waters, little knowing the effects which should follow their use, and with no medical direction. Many patients have been sent to places in the far west in the hope of favoring recovery from tuberculosis, only to become homesick and to return home disheartened after putting up with discomforts and privations which might have been wholly avoided if the patients had been sent to more appropriate places in the same region.

Carefully-planned and systematized tours for medical men could be arranged so that the springs, watering places, health resorts, etc., in a certain section of the country could be visited and pleasure be combined with the opportunity of gaining much useful information. The people who are financially interested in such resorts and the transportation companies could well afford to bear the ordinary expense of such tours. As a result more patients would be sent to deserving places, and because of the increased knowledge of physicians as to the facilities and advantages of different springs, etc., patients would be sent to the places best suited to their particular cases and the results would be correspondingly gratifying. The planning and execution of such educational excursions would properly belong to the medical society, and the details would have to be worked out in each particular case. There seems to be no doubt that such trips might be of great value to all concerned, and just as profitable in this country as they seem to be in Europe.

A WISE JUDGE?

A Supreme Court judge in North Carolina[1] has decided that the practice of medicine and surgery in all its branches, as implied in the North Carolina medical practice law, consists solely in giving or prescribing drugs and performing surgical operations and that an osteopath and magnetic healer can not be considered as a medical practitioner under the law. It "can not be conceived," says this legal light, that the legislature would require one who eschews the use of drugs and surgery to pass an examination in anatomy, physiology, pathology, etc., which would be "useless knowledge to exact of an osteopath." This is in effect an intimation that any future legislation defining the practice of medicine so as to bring osteopaths, magnetic healers, etc., under the law is impossible in the opinion of the Supreme Court; a sort of anticipatory judicial decision crippling the power of the legislative branch of the government, as a correspondent of the *Raleigh Post* points out. This is only possible by making it out unconstitutional, and what there is to justify it in the constitution of the state of North Carolina is beyond our knowledge. We shall watch with interest the future course of events in that state to observe how this judge-made fundamental law is taken by the law makers. The dictionary definitions that medicine is the science of healing and treatment of disease generally are ignored as well as their judicial recognition in other commonwealths. The English language, according to its standard interpreters, therefore comes under the condemnation of this spokesman of the Supreme Court of North Carolina. The medical profession in that state is, we believe, influential and numerous enough to bring about, if it tries, some legislation analogous to that in other states, defining the practice of medicine more in accordance with common sense and good usage than as laid down by this judicial authority, and it is to be hoped that the court as a whole may then give out a more creditable opinion.

MILLIONS FOR MEDICAL SCHOOL.

The extravagant statements with which the daily papers have been filled for the last few days regarding the new relationship between Rush Medical College and the University of Chicago, in which the writers play at battledoor and shuttlecock with millions, are, like the average so-called historical novel, founded on fact, and

1. See Medicolegal Department, p. 1278.

also like the historical novel, on very little fact. On account of possible misconception we mention briefly the progress and present status of the negotiations. For a considerable time Rush Medical College has been affiliated with the University of Chicago, and beginning with this year the first and second years' studies of the medical course have been taken at the university. The trustees of Rush Medical College, forecasting the increase in importance of the school, and appreciating the necessity of a permanent and sufficient endowment, without which their plans of increasing the length of the course of study and raising the standard could not successfully be carried out, early in the spring made a proposition to the university of organic union instead of affiliation, pledging themselves to raise the sum of one million dollars in case their proposition was accepted. The university considered the matter, approved it, and a few weeks ago presented it to the friends of the university in New York, who also signified their approval. It now remains only for the necessary legal steps as regard charter and so on to be taken by the trustees and for the promised million dollars to be obtained. It is not proposed that the name of Rush Medical College be lost, but that it be incorporated in the official designation of the university in some such way as "Rush Medical School of the University of Chicago." Of course, no one can say that eight million or eighty million dollars may not "ultimately be spent by the University of Chicago for building up Rush Medical College," but the facts just stated include all with which the authorities of the university and college are at present acquainted.

THE CORRESPONDENCE DIPLOMA MILL.

With the exit from business of the regular diploma mill of the Armstrong type, it must not be expected that the field is left unoccupied. As long as there is dupable material there will be found operators to work it up. One would think that the world would tire of being fooled, but until the weary cease from troubling them for their services the wicked will never be at rest. Among the circulars before us from concerns at present energetically seeking business we have one from Chicago which claims to be regularly chartered for the purpose of teaching the diseases of the eye, ear, nose and throat. It gives out its diplomas at the club rates of $10 each, payable in five payments, semi-monthly, and the full and illustrated correspondence course of ophthalmic hypnotism thrown in for $2.50 more. Residence or personal attendance is not necessary, as the instruction is given also by correspondence, and the circular naively says there is nothing about either diploma to indicate whether it was obtained by "correspondence" or a local course. It also furnishes "instructions how to advertise." Another institution reporting from South Bend, Ind., gives the degree of doctor of optics after a twenty-lesson correspondence course, at the club rates of $7.50 to classes of 1,000. This looks as if its clientele had grown, as in its earlier circulars the same rates were offered to classes of 150, and the flooding of the country with $7.50 "Doctors of Optics" is something rather serious to contemplate. It is of interest to note here in this connection that one of these concerns, the Chicago one, claims that its correspondence course has been "openly endorsed by a number of medical journals," including among them the *Therapeutic Gazette*, *Medical Age* and *Medicine*. This, we think, must be a misrepresentation, as it is certain that our respected contemporaries would never have endorsed what is so evidently unethical as it appears to be from its circulars. It is possible that the merest mention is quoted as an endorsement; this is, indeed, suggested by an enclosed slip, attempting to make some general remarks by President Harper of the University of Chicago appear an endorsement of the course. Therefore, it is perhaps advisable for us to specifically and positively say that this notice is not an endorsement. If the medical authorities, the state boards of health and of medical examiners can not take up the matter, it might be one for the scrutiny of the postal authorities. These concerns certainly appear to be endeavoring to take in the public's money by advertising to give out wholesale a lot of diplomas and high-sounding titles with what must be pretty nearly a minimum of qualification.

THE SELF-ADVERTISING PRACTITIONER.

In a previous issue[1] we printed a clipping from a country newspaper which described the new equipment of a certain physician in such accurate terms that we expressed the opinion that the physician had assisted the editor in its construction. A number of correspondents have called our attention to what we are sorry to say is a too evident fact that some—not many we are happy to say—of the medical and surgical leaders of the great medical centers are not averse to similar newspaper notice. Some of our critics enclose newspaper clippings in support of their allegations. As an example, one correspondent calls attention to a two-column notice of the "Latest Triumph of American Surgery" in one of the best-known weekly lay publications of the day, where it appears with the portrait of a triumphant surgeon inserted between a champagne advertisement and others of Nabisco sugar wafers, Beeman's chewing gum and Williams' shaving sticks. We have ourselves observed these things, and it pains us to think of the mortification such publications must give the eminent parties whose names are thus taken in vain. We remember a distinguished professor's lamentations over the sins of the reporters who, in spite of his expressed wishes, kept reproducing what purported to be verbatim interviews with him in regard to the notable features of his work that had an interest for the reading public. We are well aware that the newspaper man is ubiquitous, that his moral sensibilities are seldom fine enough to permit him to forego a scoop, and that any one who amounts to anything is liable to suffer at his hands. Those who are more distinguished will, of course, suffer more, but there are some who seem to suffer most, to have an idiosyncrasy, as it were, a special susceptibility to his attacks. There are some particularly shining marks who specially deserve the sympathy and condolence of the profession. Some men are born to be notorious, some achieve notoriety and some have it thrust upon them. No one can properly envy any one who has the misfortune of receiving the un-

1. THE JOURNAL, Oct. 11, 1902, p. 924.

ethical notoriety derived from what is, of course, undeserved and unauthorized newpaper puffery. For "Brutus is an honorable man; so are they all, all honorable men." But seriously, the contention of our correspondents is just. Criticism should be applied with equal force to him who stands high in the profession as to the unknown man of few friends and few attainments. There can be no two rules of conduct. If it is wrong for one physician to allow himself to be written up in the newspapers, it is wrong for another. The great city surgeon or physician whose conduct is dishonorable is a sad example to the country practitioner. The "leading lights" are supposed to lead in ethics as well as in diagnosis. If they do not, they are not leaders in a worthy sense. The fall of the tempted practitioner is often swift: surreptitious advertising, open display, exaggerated assertion, quackery. If he be encouraged in his course by his superior in skill, let the blame rest where it should. There is but one rule for both.

Medical News.

ALABAMA.

Alabama Medical College, Mobile, formally opened for the session of 1902-1903 with an address by the dean, Dr. George A. Ketchum, October 10.

Personal.—Dr. James M. Tubb, Bessemer, has been appointed company physician at the coal mines at Virginia.——Dr. Eugene D. Bondurant, Mobile, has been appointed a trustee of the Alabama Insane Asylum.——Dr. William M. Jordan, Birmingham, has become associated with Drs. J. D. S. Davis and W. E. B. Davis.

Birmingham Medical College Opens.—The ninth annual session of this college was opened, October 1, in the new college building, which has just been completed at a cost of $30,000. Dr. Benjamin L. Wyman, dean of the college, delivered the opening address, and addresses were also made by President A. P. Montague of Howard College, and Drs. W. E. B. Davis and R. M. Cunningham.

COLORADO.

Maternity Re-opened.—The Denver Maternity and Woman's Hospital was re-opened, November 1, with a new corps of nurses, an incubator and a training school for nurses.

September Mortality.—During the month 819 deaths and 34 still-births were reported. The annual death rate was 17.02 per 1000. Typhoid fever caused 67 deaths, scarlet fever 7, and diphtheria 11.

Personal.—Dr. Frederick H. Welles, Victor, sustained a serious crushing injury of the right foot recently, in an elevator accident.——Colorado Sanitarium, Boulder, has secured the services of Dr. Howard F. Rand, Battle Creek, Mich., as medical superintendent.

Smallpox Quarantine.—At the semi-annual meeting of the State Board of Health an order was issued providing that the minimum period of quarantine for those suffering from smallpox shall be not less than four weeks from the beginning of the eruption, and in any case not less than ten days after scaling is completed.

Sanatorium to Remove.—The Rocky Mountain Industrial Sanatorium has given up its home near Barnum and will move to more commodious quarters near Denver. It is expected that the new sanatorium will be in running order by next spring. Tent life is one of the features of this home, and the Barnum location had not the space required for the tents and ground for cultivation. There have been 101 patients in the home, and probably this number will be greatly increased when the new home is finished.

DISTRICT OF COLUMBIA.

Many New Members.—At the October 1 meeting of the Medical Society of the District of Columbia, 55 new members were admitted.

Medical School Opens.—The medical school of Columbian University was opened October 1. Dr. Albert F. A. King, dean emeritus, in his address reviewed the history of the school from the time of its organization in 1821 to the present time.

Post-Graduate School Incorporated.—Articles of incorporation for the Washington Post-Graduate Medical School were placed on record, November 1. The incorporators are: Drs. George M. Sternberg, Walter Wyman, Pressly M. Rixey, Robert M. O'Reilly, Alonzo B. Richardson, Samuel S. Adams, Edward A. Balloch, Swan M. Burnett, E. A. de Schweinitz, Joseph Taber Johnson, H. L. E. Johnson, George M. Kober, Sterling Ruffin, J. Ford Thompson, and William C. Woodward. There will be 104 professorships established: Six of preventive medicine, two of medical zoology, one of protective inoculations and serum-therapy and biochemistry, two of sanitary chemistry, eight of bacteriology, seven of pathology, fourteen of internal medicine and therapeutics, one of surgical anatomy, fourteen of surgery, six of military medicine and surgery, two of orthopedic surgery, nine of gynecology, six of obstetrics, two of mental and nervous diseases and electro-therapeutics, three of tropical diseases, four of diseases of children, two of diseases of the stomach, eight of diseases of the eye, eight of diseases of the nose, throat and ear, four of special diseases, and four of diseases of the skin.

ILLINOIS.

Cook County and Chicago.

Smallpox in Cook County.—In and adjacent to Evanston, a suburb immediately adjoining Chicago, and with a population of less than 20,000 by the last national census, there are now more than 40 cases of smallpox.

Bazaar for Lying-In Hospital.—A bazaar was held in the Palmer House parlors this week to furnish funds for the enlargement of the Chicago Lying-In Hospital and Dispensary, and for the establishment of a branch in the northwest district of the city.

Chicago Personals.—Dr. Arthur M. Corwin has been elected to the chair of physical diagnosis in the medical department of the University of Illinois.——Dr. D. A. K. Steele has so far recovered from his recent accident that he has resumed his professional work.——Dr. Henry F. Lewis has returned from Europe.

Needed Improvements at Cook County Hospital.—The county board will, it is hoped, at its next meeting, appropriate $75,000 for a contagious disease ward, $25,000 for a tuberculosis ward and $25,000 for an alcoholic ward at the county hospital. Every ward at the hospital is crowded and the suggested improvements are urgently required.

Chicago's smallpox record during the year is remarkable, but it has been made so only through the constant reiteration of the virtue of proper vaccination. During the first ten months there were 310 cases, not one of which had ever been properly vaccinated. Out of the total number 4 died, 295 were discharged, and 11 remained in the hospital at the close of last week.

Chicago Deaths.—The total deaths for the week—469—are 30 more than for the previous week and 72 more than for the corresponding week of last year. This is equivalent to an annual death rate per 1000 of 13.43, and indicates an increase in the mortality rate of nearly 7 per cent. over that of the week before, and of more than 14 per cent. over that of the first week of November, 1901. The principal increase is in the deaths of those over 60 years of age from pneumonia.

County Institutions Crowded.—At the Dunning Insane Asylum nearly 1000 patients are compelled to sleep on the floor because of lack of space, and at the Dunning Infirmary similar conditions exist. It is expected that the county board, at its next meeting, will authorize the expenditure of $350,000, divided as follows: Special building for convalescents, $200,000; building for tuberculous patients, $50,000; four additional cottages for insane patients, $100,000.

INDIANA.

Dr. James F. Hibberd, Richmond, celebrated his eighty-sixth birthday, November 4.

Central Medical College Building Opened.—The new building of the Central College of Physicians and Surgeons, Indianapolis, was formally opened, October 31. Dr. Frederick C. Heath made the address of welcome.

Hospital for Sick Insane Ready.—The hospital for the sick insane, in connection with the Central Indiana Hospital for the Insane, Indianapolis, which has been erected and

equipped at a cost of $132,000, was opened, November 5, for the admission of patients.

Flower Mission Hospital Begun.—Ground was broken, October 28, for the new hospital for incurables, advocated by the Flower Mission, Indianapolis, and rendered possible by the gift of $5000 by an anonymous donor on the condition that a similar amount be raised by the mission.

Tuberculosis, in September, caused 338 deaths. Of these 141 were males and 197 females; 31 died under 5 years; 5 between 5 and 10; 6 between 10 and 15; 40 between 15 and 20; 52 between 20 and 25; 36 between 25 and 30; 36 between 30 and 35; 17 between 35 and 40; 23 between 40 and 45; 22 between 45 and 50; 18 between 50 and 55; 12 between 55 and 60; 15 between 60 and 65, and 27 beyond that age.

Out-of-Door Treatment for Tuberculosis.—According to the secretary of the State Board of Health, at least 15 Indiana consumptives who began the open-air treatment during the summer, will continue to live and sleep out of doors this winter. A few of them are having open-air houses built. These outdoor houses are frame, and consist of but one room, and it is entirely open on one side. A short strip of canvas, used as an awning and not a covering for the open side, is arranged to keep out the snow and rain, but not the air. Some will spend the winter on open porches or in tents.

IOWA.

Cornerstone Laid.—The cornerstone of the new St. Thomas Hospital, Marshalltown, was laid by Archbishop Keane of Dubuque, October 22. The hospital, when completed, will have cost about $30,000.

Forty Years in Practice.—Dr. Joseph C. Krejci, Sioux City, celebrated the fortieth anniversary of his entry into professional life, November 3, by a dinner, at which he was presented with a gold-headed cane.

Unrecorded Physicians Arraigned.—The October grand jury summoned before it many Dubuque physicians who had neglected to file certificates with the county recorder, as required by law, and as a result, it is believed that none of the city practitioners is now unregistered.

Ellsworth Hospital Opened.—The new Ellsworth Hospital, Iowa Falls, has been formally opened. At the opening ceremonies addresses were made by Mayor J. H. Funk, Iowa Falls, and Drs. Daniel W. Crouse, Waterloo; Joseph L. Powers, Reinbeck, and J. Clinton Powers, Hampton.

No Certificate for Crofford.—The State Board of Health, November 5, decided to refuse to suspend the order revoking the certificate of Dr. J. W. Crofford, Lamoni, who some months ago was sentenced to a term in the penitentiary for murder resulting from a criminal abortion. He appealed to the Supreme Court, and the appeal is pending. Following his conviction his certificate to practice medicine was suspended. Dr. Crofford was released on bail pending the decision of his case by the Supreme Court. He took the ground that the Board of Health should not have suspended his certificate until it was settled by the Supreme Court whether he was justly convicted by the trial court. The board, however, has concluded to maintain its position, and the order of revocation stands.

KANSAS.

Resolutions Regarding Dr. May's Death.—At a meeting of the faculty of the College of Physicians and Surgeons, Kansas City, and at a meeting of the trustees of the same institution resolutions were adopted eulogistic of the late Dr. James W. May.

Personal.—Dr. Charles E. Caswell, Santa Fe surgeon at Holliday, fell from a train at that place, October 28, and fractured his right shoulder.——Dr. George H. Hoxie, Lawrence, has been appointed associate professor of anatomy in the University of Kansas, vice S. W. Willison.——Dr. Charles Lowry, Topeka, has been elected secretary of the State Board of Health, vice Dr. William B. Swan, deceased.

Washburn-Kansas Merger.—It is now reported that the merger of Kansas Medical College and Washburn will soon be fully consummated. The only question about which there has been any discussion is the retention of its own identity by the medical college. The medical college authorities desired that the college should be known as "The Kansas Medical College, the Medical Department of Washburn College," and while there was originally some opposition to this on the part of the Washburn trustees, they have now given their assent to it.

MARYLAND.

Robbery.—The residence of Dr. Henry W. McComas, Oakland, Allegheny County, was robbed November 4.

A memorial window in honor of the late Dr. William W. Duvall, Bowie, has been erected in Holy Trinity Church, Prince George's County, by his friends.

Smallpox on Elliott's Island.—Dr. John S. Fulton, secretary of the State Board of Health, reports an outbreak of smallpox on Elliott's Island, two men and a woman having the disease, supposed to have been brought from Bridgeville, Del.

Baltimore.

Death and Disease.—There were 166 deaths in the week ended November 7, of which only five were from typhoid fever. Measles and diphtheria are the most prevalent infectious diseases.

Friedenwald Memorial.—Memorial services in honor of the late Dr. Aaron Friedenwald were held at the McCulloh Street Synagogue November 9. Addresses were made by Rev. Drs. Mendes of New York and Schnuberger of Baltimore, and Cyrus Adler of New York, while the medical career of the deceased was discussed by Dr. Solomon Solis-Cohen, Philadelphia.

Personal.—Dr. John C. Hemmeter has been elected president of the Book and Journal Club, and Dr. John Whitridge Williams president of the Johns Hopkins Hospital Medical Society. ——Dr. H. Clinton McSherry is in Paris.——Dr. Herman Brulle has been appointed medical agent for the southern district to treat the indigent sick in place of the southern dispensary.

The Vaccination Law.—The health commissioner of Baltimore, Dr. Bosley, has issued 100,000 blanks with the following notice: "The law directs that children be vaccinated before they are one year old. Parents and guardians are held responsible for failure to comply with this law. The law also provides that every citizen shall be vaccinated at least once. You will please see that the law is complied with in your family immediately. The vaccine physician of this ward is to be found at —— street, office hours ——, where he may be seen, or a postal card sent to the Health Department requesting a physician to call will receive prompt attention." This notice will be served on every householder in the city. The action is the result of a recent case of smallpox of a very mild type in Cumberland, which was not recognized, and in consequence 12 or 13 cases resulted from it.

Establish Memorial Lectureship.—Dr. and Mrs. Christian A. Herter of New York City have given $25,000 to Johns Hopkins University for the foundation of a memorial lectureship in the medical department "designed to promote a more intimate knowledge of the researches of foreign investigators in the realm of medical science." This end is to be secured by inviting each year some eminent worker in physiology or pathology to deliver one or more lectures at the university on some subject with which he is especially identified. The lecturer will receive an honorarium, the annual income of the endowment fund. The committee to select the lecturer will consist of Drs. William H. Welch, William Osler and John J. Abel, and it is intended to continue this committee so as to represent pathology, physiologic chemistry and clinical medicine. There is no bar to extending the proposed lectureship to leaders in medical research in America if deemed advisable. Dr. Herter was a graduate student at the university in 1887-88, pursuing a special course in Dr. Welch's laboratory. He holds a chair in University and Bellevue Medical College, New York, and is a well-known contributor to the literature.

MASSACHUSETTS.

Bequest to Boston Hospital.—For a building, to be known as the Lamont G. Burnham Ward, $150,000 is left to the Boston City Hospital by a codicil of the will of Lamont G. Burnham, ex-president of the Chamber of Commerce, who died at Manchester recently.

Officers and Staff Re-elected.—At the annual meeting of the trustees of Framingham Hospital, October 16, the old board of officers, staff and committees were re-elected. The vacancy on the consulting staff caused by the death of Dr. Zabdiel B. Adams, was not filled.

Endowment Depends on Merger.—The Lowell General Hospital and the Corporation Hospital of that city are to be merged into one institution, an endowment fund of $100,000 having been promised by an anonymous benefactor on condition that the merger be effected.

Damages Against Physician.—In a suit recently decided in the Superior Court, a woman who had brought suit to recover $5000 damages suffered by reason of the alleged negligence of the defendant, a physician and surgeon, of Boston, whom she had employed professionally, $2000 damages were allowed the plaintiff.

Dr. Zakrzewska Eulogized.—A unique function in Boston, October 29, was a meeting held in memory of Dr. Marie E. Zakrzewska, founder of the New England Hospital for Women and Children. It was in reality a celebration of the advances made by women in medicine, and particularly the growth of hospitals for women, conducted wholly by women, though the subject matter of the proceedings was largely eulogy of the first great New England woman physician.

Decrease in Death-Rate.—Dr. Samuel W. Abbott, secretary of the State Board of Health, comments on the decrease in the death-rate in the state and its causes. The average annual death-rate for the past 50 years was a little over 19 per 1000, never rising higher than 22.8 per 1000, in 1872, and never until 1901 has it fallen below 17 per 1000. There has been a substantial drop in the death-rate from 20.8 in 1892, to 16.8 in 1901. If no great epidemic occurs before Jan. 1, 1903, the indications are that the death-rate of 1902 will prove to be as low as, if not lower, than that of 1901. The causes which he considers operative are the improved method of treatment whereby the death-rate from tuberculosis, typhoid fever, scarlet fever, whooping cough, puerperal fever and diphtheria has been decreased; the better organization of local health boards, with sanitary inspection and laboratory work, and finally to the change in the age-constitution ratio.

MICHIGAN.

To Combat Smallpox.—The Detroit Common Council in special session, October 31, instructed the city controller to audit bills of the Health Department to the extent of $20,000 to meet the bills for the purpose of general vaccination and other expenses necessary to the prevention of the spread of smallpox.

The Most Dangerous Communicable Diseases.—Meningitis was reported present in Michigan during October, at 6 places; smallpox at 34 places; whooping cough at 35 places; measles at 42 places; diphtheria at 71 places; scarlet fever at 148 places; typhoid fever at 173 places, and consumption at 241 places. Meningitis was reported at 1 place less; smallpox at 5 places less; whooping cough at 3 places more; measles at 3 places less; diphtheria at 19 places more; scarlet fever at 45 places more; typhoid fever at 4 places more, and consumption at 10 places more, in October, than in the preceding month.

Personal.—Dr. and Mrs. Corydon M. Ryno, Benton Harbor, have returned from Europe.——Dr. William C. McCutcheon, Cassopolis, has been re-appointed physician of Cass County.——Dr. Willis Earle Chapman, after service in the Philippines, has returned to Sparta, via Europe.——Dr. Percy E. Wagar, formerly of Three Rivers, has been appointed secretary of the province of Benguet, Philippine Islands.——Dr. Johnston B. Kennedy, Detroit, left for Europe, October 28. He was tendered a banquet at the Russell House the previous evening. He expects to remain abroad until next spring.

Comparative Health of Michigan.—For October, compared with the preceding month, scarlet fever and diphtheria were more prevalent; and diarrhea, cholera morbus, inflammation of bowels, dysentery, remittent fever, cholera infantum, measles and smallpox were less prevalent. For October, compared with the average for October in the 10 years, 1892-1901, diphtheria, scarlet fever, whooping cough, measles and smallpox were more than usually prevalent; and diarrhea, typhoid fever, consumption, intermittent fever, cholera morbus, inflammation of bowels, dysentery, erysipelas, remittent fever, and cholera infantum were less than usually prevalent. The decreased prevalence of diarrhea and of the other diseases which prevail during the summer and fall months, may have been due to the unusually cold and wet weather of the preceding month.

Appeals to Supreme Court.—Dr. Peter Radabaugh, a graduate of the Miami Medical College, aggrieved at the refusal of the State Medical Board of Registration to grant him a certificate to practice medicine in Michigan, applied to the Supreme Court, November 3, to have an issue framed in which the facts in connection with the board's refusal could be determined. The court ordered a single issue settled. This was as to whether the board had arbitrarily refused to consider the question whether the college from which Radabaugh was graduated was a reputable college within the meaning of the law. The matter was referred to the Circuit Court for Ingham County for determination. The petitioner desires to have his certificate of graduation accepted as conclusive proof of his ability to practice medicine, and the state board claims that the college is not a reputable one within the meaning of the statute.

MISSISSIPPI.

Personal.—Dr. Hyman McM. Folkes, Biloxi, has been appointed a member of the State Board of Health, vice Dr. Benjamin D. Watkins, Natchez, resigned.——Dr. T. D. Bourdeaux, Meridian, has been appointed assistant physician at the East Mississippi Insane Hospital.

Status of Osteopathy.—The Supreme Court of Mississippi now has under advisement the question whether the osteopaths operating in the state are violating the laws regulating the practice of medicine. The question is brought up in the case of Hayden vs. State, appealed from the Circuit Court of Alcorn County, wherein the appellant was convicted of practicing medicine without license.

Improved Health of Mississippi.—The State Board of Health, at its annual meeting, reached the conclusion that the health situation of Mississippi was more satisfactory than it had been for several years. The reports of the county health officers show a notable absence of contagious and infectious diseases all over the state. A little smallpox remains in a few counties of the Delta, but this is gradually being suppressed, and in no section could it be regarded as epidemic.

NEW YORK.

New York City.

Propaganda Against Tuberculosis.—The Charity Organizations' tuberculosis committee has mapped out the following work of prevention, and even better results than those heretofore attained are hoped for: Investigation of the relation of the disease to overcrowding in infected tenements; publication by leaflets and lectures of the results of modern treatment; encouragement of the establishing of public and private sanatoria and relief of indigent consumptives by supplying proper food and lodging places.

Changes at Bellevue Hospital.—Dr. George T. Stewart, who has been superintendent of Bellevue Hospital, has been promoted to the new position of department superintendent, and his former deputy, Michael J. Rickard, who has been faithful to Bellevue for more than thirty years, has been appointed superintendent of that hospital. In his new position Dr. Stewart will have not only Bellevue, but Gouverneur, Fordham and Harlem hospitals under his supervision. An effort has been made by the trustees materially to raise the pay of orderlies and of various helpers in the hospital and to improve this part of the service. The inside of the old Bellevue Hospital Medical College building is now to be torn down and reconstructed as a modern dormitory.

Trance Ends in Death.—Mention has already been made of the young woman lying in a trance at St. Vincent's Hospital. After remaining in this state for thirteen days she was roused to consciousness for a short time, but lapsed again. However, she subsequently became conscious of her own accord, and told her mother that all she could recall was that she had gone to bed in her room and awakened to find herself in the hospital. After a trance lasting for twenty days the girl died in coma. The day before her death there was evidence of great exhaustion; the pulse rose from 136 to 156, and the temperature dropped to 100.8 F. The postmortem examination was made by Dr. Theodore C. Janeway, in the presence of a number of eminent physicians, after a number of tests had been applied to determine positively that death had actually taken place. A careful examination failed to find any gross lesion, and unless the microscopic study of the nervous system throws new light on the case its nature will continue to be in doubt.

PENNSYLVANIA.

Philadelphia.

Hughes Memorial.—Contributions are being made for the erection of a tablet at the Philadelphia Hospital in memory of Dr. Daniel E. Hughes.

Personal.—Dr. John H. Packard has returned from Europe.

Bequest.—By the will of the late Philip Jagode, a bequest of $5000 for the founding of a free bed in memory of his wife was made to the German Hospital. Should his daughter die without children $20,000 more will go to the same institution.

Typhoid Widespread.—For the week ended November 8 124 new cases of typhoid fever were reported. The disease is widespread throughout the city, there being only two wards free. The health authorities say that more than 500 cases of typhoid fever are now under treatment.

A Distinguished Visitor.—Dr. George C. Guillain of Paris, chief of clinic to Dr. Raymond, Charcot's successor, recently spent several days in Philadelphia. He visited the Orthopedic, Philadelphia, Jefferson and University hospitals, and was entertained at dinner by Dr. Charles K. Mills.

The Keen-Wood Banquet.—At the banquet in honor of Drs. William W. Keen and Horatio C. Wood, November 6, Dr. John H. Musser was toastmaster. Dr. William Welch, Baltimore, proposed the toast "Medicine," to which Dr. Wood responded. Dr. William B. Coley, New York City, gave the toast "Surgery," to which Dr. Keen made response. Dr. J. Chalmers Da Costa spoke to the toast "The Pupil in Surgery," and presented Dr. Keen with a loving cup. Dr. Hobart A. Hare replied to the toast "The Pupil in Medicine," and presented a loving cup to Dr. Wood. Among the 136 present were Drs. Abraham Jacobi and John D. Bryant, New York; Drs. Maurice Richardson, J. Collins Warren and Samuel J. Mixter, Boston; Dr. Allan McL. Tiffany, Baltimore, and Surgeon-General George M. Sternberg, U. S. Army (retired).

RHODE ISLAND.

Gift to Woonsocket Hospital.—Mrs. Chester B. Smith has donated the funds necessary to provide a new wing for the Woonsocket Hospital, which will include an operating room, emergency and anesthetizing rooms, etc.

Addition to Newport Hospital.—It is announced that Mrs. Cornelius Vanderbilt will provide an addition to the Newport Hospital, in memory of her husband. The new wing will cost $100,000, and will be three stories in height, and 125 by 40 to 50 feet.

Personal.—Dr. Vernon M. Griswold, who some years ago removed from Fredonia, N. Y., to Westerley, has returned to his former home and resumed his professional work in Fredonia. ——Dr. Mary Secord Packard, Providence, has accepted the position of resident pathologist at the New England Hospital for Women and Children, Boston.

GENERAL.

Many Post-Office Physicians Released.—By an order from the Postmaster-General, November 7, the position of post-office physician in all cities of less than 500,000 inhabitants is abolished as unnecessary. The saving to the government will amount to $10,500 yearly. Ten physicians are released.

Trip to the International Medical Congress.—It is reported that many physicians will attend the International Medical Congress at Madrid, April, 1903. Arrangements have been made for a party of physicians from the eastern states. The trip from New York and return will require about one month. Physicians and members of their families who join this party will be entitled to the special rate of $265 for the round trip, including first-class passage on the steamer and railway, hotel accommodations for 14 days in Spain, including room, meals, all handling of baggage, special interpreter and fees. The trip will be via Gibraltar and Cordova to Madrid. There will be side trips to interesting parts of Spain at extra cost, and also returns by other routes for those who desire. Physicians in the eastern and middle states may secure more information from Dr. Ramon Guiteras, 75 West 55th Street, New York.

What Cities Lead in Disease.—The report of the U. S. Department of Labor gives health reports of many cities from which are taken the following summaries of the ten cities in which each disease named is most common:

Typhoid Fever—Pittsburg, Minneapolis, Allegheny City, Kansas City, Louisville, Washington, Columbus (Ohio), Birmingham, Houston and Atlanta.

Malaria—Houston, Memphis, Savannah, Charleston, Augusta (Ga.), Little Rock, Dallas, San Antonio, Wheeling and Montgomery, all, it will be noted, in the South.

Scarlet Fever—Knoxville, Salt Lake City, Denver, Boston, Pittsburg, New York, Reading (Pa.), Columbus (Ohio), Allegheny and Montgomery.

Diphtheria—Minneapolis, Lowell (Mass.), Salt Lake City, Des Moines, Camden (N. J.), Hartford, Cleveland, Denver, Boston and Duluth (Minn.). New Orleans makes the best showing in this matter of any city in the Union.

Tuberculosis—San Antonio, Schenectady (N. Y.), Rochester, Los Angeles, Mobile, Little Rock, Evansville, Troy, Washington and Houston. The presence of San Antonio and Los Angeles in this list will be understood as due to persons afflicted with tuberculosis going there.

Pneumonia—Birmingham, Troy, Worcester (Mass.), Scranton (Pa.), New York City, Utica, Allegheny, Des Moines, Atlanta and Butte (Mont.).

Cancer—Grand Rapids (Mich.), Portland (Ore.), Spokane, Rochester, Albany, Hartford, Cambridge, San Francisco, Oakland and Milwaukee.

Louisville may claim the title of the paralysis city, leading in that disease. Detroit in bronchitis, Rochester in heart disease, Cleveland in appendicitis; Albany is the center of Bright's disease for the country, but New York follows closely. Pittsburg kills most people by accidents, while San Francisco has a suicide record unequaled anywhere in the world and leaving Paris far behind.

The Naval Medical School was opened November 3. Medical Director R. A. Marmion, U. S. N., president of the faculty, made the introductory address to the class, giving the history of previous attempts to establish a school, the necessities therefor, and the scope of its projected work. Remarks were also made by Ex-Surgeon-Generals Gunnell and Van Reypen and Dr. S. S. Adams, president of the Medical Society of the District of Columbia. The school is essentially post-graduate in its nature, and starts its instruction with the assumption that its students have received a thorough training in the general principles of the chief medical branches. The students are those already belonging to the Navy. The course will cover five months. The following is the faculty and the list of subjects to be treated by them:

Hygiene (of ship, camp and hospital) and Quarantine, Medical Director R. A. Marmion.
Duties of Medical Officers, Medical Inspector John C. Boyd.
Military Diseases and Tropical Medicine, Surgeon John W. Ross.
Military Surgery, Surgeon A. C. H. Russell. (In this course the Hospital Corps drill is included.)
Bacteriology and Chemistry, Surgeon E. R. Stitt.
Ophthalmology, Passed Assistant-Surgeon T. D. Myers.
Instructions in Signals, Manual of the Sword and Extracts from Tactics, by an officer not yet designated.
Naval Law, Mr. E. P. Hanna, solicitor of the Navy Department.

The school occupies a portion of the buildings formerly used as the Naval Observatory, which have been remodeled in order to adapt them to the requirements of the new work just undertaken. The following assistant surgeons compose the class:

Bachmann, R. A., and Strine, H. F., Pennsylvania; Munson, F. M., Delaware; Brown, E. M., California; Hoyt, R. E., New Hampshire; Traynor, J. P., Maine; Baker, M. W., Virginia; Holloway, J. H., Kentucky; Neilson, J. L., Shaw, H., and Jenness, B. F., Massachusetts; and Michels, R. H., Illinois.

International Congress at Madrid.—The American Committee of the Fourteenth International Medical Congress announces that the following list of sections has been authorized:

1. Anatomy (Anthropology, Comparative Anatomy, Embryology, Descriptive Anatomy, Normal Histology and Teratology).
2. Physiology, Physics and Physiologic Chemistry.
3. General Pathology, Pathologic Anatomy and Bacteriology.
4. Therapeutics and Pharmacy.
5. Internal Pathology.
6. Nervous Diseases, Mental Diseases and Criminal Anthropology.
7. Pediatrics.
8. Dermatology and Syphilis.
9. General Surgery.
10. Ophthalmology.
11. Otology, Rhinology and Laryngology.
12. Odontology and Stomatology.
13. Obstetrics and Gynecology.
14. Military and Naval Medicine and Hygiene.
15. Hygiene, Epidemiology and Technical Sanitary Science.
16. Legal Medicine and Toxicology.

Subscriptions (25 francs, which is about $4.75) must be paid before the opening of the congress to the general secretary, Faculty of Medicine, Madrid, and members should on paying the subscription state the section or sections to which they wish to belong. The Spanish committee of entertainment announces that the daily charge per person for lodging, service, light and three meals is, in hotels, from $2.50 to $7.00, and in private houses from $1.75 to $4.25. These sums include transportation from the station to the lodging and from the lodging to the station. As it is expected that Madrid will be crowded those who are to attend the congress are advised to apply for rooms as soon as possible to the Bureau des Logements, Faculte de Medicine, Madrid. Blank forms for these applications may be obtained on request from the secretary of the American committee. The Spanish committee on transportation makes no provision for trans-Atlantic travel. Their arrangements are made for receiving visitors at the port of entry and for transportation to Madrid. The French and Spanish railroads have granted delegates a general reduction of one-half on the fares. In the United States the Trans-Continental Passenger Association advises delegates to use the regular nine months' rate from Pacific points to Missouri River points. The American secretary is Dr. John H. Huddleston, 126 W. 85th Street, New York.

CANADA.

Toronto Vital Statistics.—According to the returns issued by the City Clerk of Toronto, the number of births so far this year up to the 1st of November totals 4095, the number of marriages 1950, and the number of deaths 2685, as compared with 3579 births, 1762 marriages, and 2882 deaths for the corresponding ten months of last year.

To Report the Tuberculous.—The Board of Health of the city of Hamilton, Ontario, is considering a by-law to compel the reporting of all cases of tuberculosis to the medical health officer. Its passage has been recommended by the medical health officer, the Hamilton Medical Society and the mayor of the city.

Nova Scotia Sanitarium for Consumptives.—The provincial government of Nova Scotia is asking for tenders for the erection of a building for the purposes of a sanitarium for consumptives. The building, which is to be located at Kentville in King's County, will be two stories and occupy a frontage of 115 feet, and is to be built of wood. It will be fitted up with all the most approved modern improvements, and when completed will afford accommodation for some fifty patients. There will be a resident medical officer in charge.

Cataloging Canadian Scientific Literature.—Medical college authorities are coöperating in an undertaking by means of which it will be possible for scientific men to keep abreast of the scientific literature of the age. At the convention of scientific workers held at London in 1896, it was decided to establish an annual scientific catalog. Canadian publications will be cataloged by the following: Pharmacology, experimental pathology and bacteriology, Professor Adami of McGill University; human anatomy, Professor Primrose of Toronto University; physiology, Professor A. B. MacCallum of Toronto University, and botany, Professor Penhallow of McGill.

Keeping the Plague Out of Canada.—Dr. Montizambert, director-general of public health, Ottawa, states that Canada's immunity from the plague is due to the rigid system of quarantine observed. Not a single case so far has been reported at the William Head Quarantine Station on Vancouver Island. In addition to this the Canadian Pacific Railway authorities are very particular in inspecting Chinese passengers, boarding their vessels at Hong Kong and other ports. Referring to smallpox, which is epidemic in some parts of the western states, the director-general states it has been largely reduced, to such an extent that the staff of inspectors along the boundary line in British Columbia has been withdrawn for the present, except at a few points.

Scarlet Fever Serum Discovered.—Dr. G. A. Charlton, Rockefeller fellow of pathology at McGill University, is said to have just established some important results in the treatment of scarlet fever. Dr. Charlton gives the details of the serum which has been discovered by him in the current issue of the *Montreal Medical Journal*, and of 15 severe cases which he has treated, 13 made prompt recoveries almost free from complications. Of the 2 patients who died, 1 succumbed within five hours after admission, and the other was attacked with diphtheria, of which it died. The results noted in the treatment were a rapid subsidence of the fever, and absence and marked amelioration of suppuration in the middle-ear, and rapid convalescences.

Notre Dame Hospital, Montreal.—At the annual meeting of the board of governors of the Notre Dame Hospital, Montreal, held last week, it was stated that a new hospital with all the modern improvements, would be erected next spring at Lafontaine Park. Dr. E. P. Lachapelle, who was again elected superintendent, made the annual medical report. There have been treated within the last year 2132 cases, against 2200 for the previous year, the decrease being in every department except the gynecologic, where 33 more patients had been attended. The total number was divided into 1285 men and 847 women; the daily cost of each patient per day was 91 cents; 1813 were discharged as cured or improved; 185 were discharged with amelioration in their symptoms; 91 died in the wards, and 45 were brought in either dying or dead. This gives a mortality of 6.10 as against 6.09 for the previous year.

FOREIGN.

The cholera record in Egypt, from November 1 to 8, was 141 cases and 132 deaths.

Finland Women May Be Pharmacists.—By an official decree the profession of pharmacy has been thrown open to women in Finland.

Much smallpox in Barbadoes is reported. A week ago the total number of cases was 1200. The other islands are inforcing a strict quarantine against Barbadoes.

The Antimorphin Suit in Germany.—The *Deutsche Med. Woch.* published recently an article signed by Lewin containing an unfavorable criticism of antimorphin. The author and the editors of the journal were sued for damages by the proprietor. It has since transpired that antimorphin contains a considerable proportion of morphin and that the price is out of all proportion to the cost of the materials. The suit was dismissed.

To Prevent the Introduction of Ankylostomiasis.—The authorities at Trieste have issued a circular warning physicians and officials to be on the lookout for cases of ankylostomiasis in Italian workmen returning from Brazil. Instructions are appended in regard to the differentiation and prophylactic measures to be instituted. Compulsory notification of each case and strict isolation of the patient are required.

Professors Ribbert, Orth and Aschoff Transferred.—When Professor Orth of Göttingen was summoned to Berlin to take the chair left vacant by Gebhardt's death, Ribbert of Graz was invited to Göttingen in his place. Aschoff of Marburg is to take Ribbert's place. Aschoff has contributed a number of works to the literature on pathologic anatomy, and has also published recently a handbook for the easy study of the history of medicine.

Incomes of Medical Men in Paris.—The *British Medical Journal* says that there are said to be 2,600 medical practitioners in Paris; of these 40 have a gross income of $40,000 to $60,00; 50 of $20,000; 50 from $10,000 to $20,000; 200 from $6,000 to $10,000; 200 from $4,000 to $6,000, and 1,700 earn on an average $725, annually. In the whole of France, outside of Paris, there are 1,600 physicians whose individual gross income averages less than $550.

The Continental Anglo-American Society.—This association of English-speaking physicians, residing in Europe and northern Africa, holds an annual meeting and banquet usually in October—this year at Paris. Next year they will meet at the same time and place as the British Medical Association. Dr. Bull of Paris is secretary, and Dr. Brandt of Nice, president. The objects of the society are mainly social and to serve as a professional link between the widely scattered members.

Trained Nurses in Germany.—The trained nurses of Germany are agitating a petition to the government to grant them an official examination after a three years' course of training, and a certificate for successfully passing the examination. This certificate can be withdrawn by the authorities in case of unworthy conduct on the part of the graduate. They also demand that the government should not appropriate funds for the support of hospitals which exact more than eleven hours of service from the nurses and which have not made adequate provision for pensions in case of old age and sickness. The government is also petitioned to supply means for an official three years' course of training.

The Campaign Against Charlatans in Germany.—The German laws do not condemn a charlatan unless he advertises what he knows to be false pretensions. Consequently the courts recently dismissed a suit against a quack as he seemed to be honestly convinced that his medicines or methods would accomplish all he claimed for them. The verdict stated that on account of the defective education and lack of previous special training, the accused was incapable of diagnosing cases correctly, and therefore had no intention to deceive when he asserted that he could cure them. The medical press comments on the utter perversion of justice in such cases, letting the quack go unscathed to further prey on the public, because of his ignorance, which should be the very reason for checking his career before he has done further harm.

The International Catalog of Scientific Literature.—This great undertaking commences with the literature of 1901. It is made possible by the co-operation of "regional bureaux" which collect all the scientific publications, pamphlets and articles in periodicals, published in their district and send the titles to the central office at London. The scope of the catalog embraces mathematics, mechanics, physics, chemistry, astronomy, meteorology, mineralogy, geology, geography, paleontology, general biology, botany, zoology, human anatomy, anthropology, physiology, pharmacology, experimental pathology, experimental psychology and bacteriology. A volume will be published annually in each of these branches of science, which it is seen embraces all of theoretical medicine. Each volume will be sold for $5, and will contain the titles listed alphabetically by authors and subjects, in English, French, German, Ital-

ian or Latin. Purely scientific articles will be given the first place and then those on the borderland and technical articles that fall within the scope of the catalog. The financial support of the work is assured as the various governments interested have appropriated funds for the work of the local branches, and have also agreed to subscribe for a certain number of the completed volumes. Germany has appropriated nearly $7,000 for the purpose for 1902. Twenty-eight countries have already made arrangements for the local co-operation. The number of periodicals to be reviewed is stated by the *Allg. Med. Ct.-Zg.* as 20 in Denmark, 55 in Holland, 31 in Japan, 28 in Norway, 19 in Portugal, 59 in Sweden, 6 in Southern Australia, 5 in Cape Colony, 41 in Canada, 197 in Italy, 435 in England, 853 in France, 1,255 in Germany and 1,500 in the United States. The entire work is the outcome and enlargement of the "Catalog of Scientific Papers" that has long been issued by the Royal Society of London. The total number of titles for the year now in press is estimated at 160,000. The volumes on botany and chemistry for 1901 have already appeared. Unless we are misinformed, the Smithsonian Institute has charge of the work in this country. The co-operation of Canada is mentioned in the Canada news of this issue.

LONDON LETTER.

Birth Palsy of the Sixth and Seventh Nerves.

At the Ophthalmological Society Mr. Nettleship described a case of this rare condition. Delivery was difficult in consequence of a brow presentation. The blades of the forceps were applied to the right mastoid region and in front of the left ear respectively. At birth the right eye was closed, and there were internal squint and spasms of the hands and arms. When three days old complete paralysis of the right face and internal squint were noticed. On the fifth day a small hemorrhage was detected in the right fundus below the disc. At the end of a month the paralysis had diminished, and after nine months it had disappeared. The injury was apparently a single intracranial hemorrhage at the base of the petrous bone involving the sixth and seventh nerves at that beginning where they are close together. Mr. Nettleship cited another case in which these two nerves suffered, but with separate lesions, the seventh by pressure of the forceps in the parotid region and the sixth by damage of the orbit. The eyelids in this case were swollen, and recovery was incomplete.

Ovarian Tumor Secondary to Breast Cancer.

At the Medical Society of London Mr. Bland Sutton described the case of a woman, aged 35, the mother of one child, whose right breast was removed in January, 1894. This was followed by recurrence three years and again four years afterward, for which excision was performed. In January, 1899, the left breast was involved and was removed. The patient remained well for two years, but in January, 1902, a tumor appeared in the abdomen, and was removed in March. Five gallons of fluid were removed in addition to a large solid ovarian tumor, exhibited. The tumor measured 7 inches in its two chief diameters, was dense, hard, and presented the typical microscopic structure of mammary cancer. The case was the most remarkable example of cancerous growth in the ovary secondary to cancer of the breast which has come under Mr. Bland Sutton's observation. The case raises the question of the frequency with which cancer attacks both breasts concurrently or after an interval of months or years. Both conditions are very unusual. Mr. Bland Sutton has come to the conclusion that when a woman has one breast removed for cancer she is five times more likely to have secondary deposits of cancer in one or both ovaries than in the remaining breast.

Correspondence.

The Immunization Treatment of Hay Fever.

NEW YORK, Nov. 1, 1902.

To the Editor:—At the last meeting of the American Laryngological Association, Dr. E. Fletcher Ingals of Chicago read a paper which you published in THE JOURNAL of June 28, 1902, concerning the immunization cure of hay fever. In this paper there are so many statements that are at variance with facts and so many misrepresentations in regard to myself, that I am obliged to ask you to publish this letter.

Ingals writes: "Dr. Curtis stated that by trying various substances he found that if a patient was rendered immune to one, he was thereby also made immune to some of the others. Curtis employed only the liquor ambrosia prepared by Fraser & Co., the constituents of which are not given," and on page 1686, "Fraser's liquor ambrosia is a proprietary preparation, the constituents of which are not known to the profession; therefore, careful physicians will hesitate to recommend it, and when it is taken no one can know certainly to what its good or ill effects may be due."

In the same article he says: "As many patients are affected by the pollen from golden rod, it appeared to us best to use preparations from both this and ragweed, instead of relying on either one alone."

After describing the products of ragweed and golden rod he continues: "Before we discovered the preparations, the hay-fever season was so nearly on us that some of our patients were clamoring for relief. To one of these I gave Fraser's liquor ambrosia with careful instructions for its use, but he happened to be a man peculiarly susceptible to the influence of drugs, from some of which he had previously experienced unpleasant symptoms. After taking a few doses of the liquid, his stomach was disturbed and he felt uncomfortable sensations, which appeared to him like those he had formerly experienced from taking an opiate; therefore, he declined to take it. As we were not familiar with the composition of this liquid, we could not urge its continuance, but within a few days we secured the preparations above referred to and decided to administer them together, but free from any other drugs, hoping thereby to obtain some accurate information for the benefit of hay-fever sufferers."

The entire tenor of his article makes it appear that he is doing a noble work with simple fluid extracts, and an insinuation is conveyed that I am using in my experiments a secret compound made by Fraser & Co. called liquor ambrosia.

My best answer to him is an extract from my article in the *New York Medical Record* of July 13, 1901: "The experiences narrated above prompted me last summer to obtain, through a drug firm, the services of a botanist to secure the flowers and pollen of enough ragweed to make an experiment on a large scale this year, on so-called hay fever, and to determine whether the hypothetical deductions from the experiments I have already conducted are truly as important as I believe them to be. The tincture and the fluid extract are the solutions most available. In my recent experiments I have discontinued the use of hypodermic medication. In the title of this paper the term hay fever is used in its popular sense, but the malady to which the treatment I have suggested applies is ragweed corasthma. I have several cases on record of golden rod and lily of the valley corasthma, which have been cured by *Solidago odora* and *Cavallaria majalis*, respectively, in three or four days; but, while these are interesting as contributive evidence, the old enemy, ragweed, is the recognized king of pollens, whose term of office begins August 12 to 20 in these latitudes and whose cruel reign is only ended by the first frost.

If my theory be correct, that this "rhinitis vasomotor periodica" or "corasthma ambrosiæ" may be prevented by giving from two to ten drops of the tincture or fluid extract of *Ambrosia artemisiefolia* t. i. d. in water, p. c., during the two weeks preceding the paroxysm, I shall consider that I have heralded what I believe to be an important discovery with becoming modesty. If, on the other hand, the results I have obtained are not verified by others, I may only say that greater men and more scientific observers have been misled by initial results that time did not substantiate. I should be pleased, however, to give to any physician who will conscientiously aid me in investigating the subject, such directions that he may experiment for himself on severe cases, in order that a collection of reports from disinterested physicians in widely separated localities may be of benefit to the cause of scientific research. In August, 1900, Fraser & Co., at my suggestion, combined the fluid extract of ragweed with aromatics in order to disguise its unpleasant taste and make it more palatable to the patient. With every bottle sent out, in reply to inquiries from the profession, a blank which read as follows, was enclosed," etc.

If, after reading my second year's report, published in the *New York Medical Record*, July 13, 1901, Dr. Ingals says that he does not know what the preparation liquor ambrosia con-

tains, and that it is a proprietary preparation unworthy of confidence, he states what is not true. I have told to every physician who has taken pains to inquire of me that the preparation made by Fraser is a fluid extract simply rendered more palatable by the addition of aromatics which are in the pharmacopeial sense drugs without chemical action and used as flavoring material.

In my investigation as to immunization of hay fever I have attempted to give every physician who has asked me for details the fullest directions and assistance, and have explained the manner of preparation of the tincture, the fluid extract and the liquor. What the particular aromatic flavoring extract was that Fraser used in the preparation of ambrosia, I never asked until I read the article of Dr. Ingals. I knew that the judgment of his chemist was better than my own as to what carminative aromatic would best disguise the unpleasant taste of the ragweed, and with every bottle dispensed was the explanation in Fraser's notes that it was the fluid extract of ragweed with aromatics.

As the medicine was used experimentally, I commenced with five drops to the teaspoonful, but later increased the dose to eight.

In my forthcoming report I shall tabulate the results in the treatment of some 8000 cases, and will in the future, as I have in the past, give to the profession every point it may wish to know. Had Dr. Ingals taken the trouble to write to me for the formula of liquor ambrosia, he would have received it.

In investigating the subject of immunization, in order to obtain exact results it was necessary to do two things: First, to have the flowers collected when the pollen was ripe, for I could not rely on the extracts I found on the market. Second, in order to know that cases treated were really treated with the fluid extract made from flowers in the proper stage of development, I was obliged to call my own preparation by a distinguishing name, simply for identification. Any preparation is proprietary when it bears the maker's name. Parke, Davis & Co's extract *Ambrosiæ artem.* is proprietary—just as much as is Fraser's liquor ambrosia. In every chemical investigation we must first know the purity of our drugs. To this end I made every endeavor to make my experiment scientifically accurate. Until I announced my final results I did not care to have every druggist in the land put his own preparation on the market, and so I protected mine with a chemist's name. Certain safeguards have been found necessary by every careful investigator, to protect himself from exactly the style of medical plagiarism and captious criticism contained in the article above mentioned.

H. HOLBROOK CURTIS,
118 Madison Avenue.

CHICAGO, Nov. 5, 1902.

To the Editor:—I have carefully read and re-read Dr. Curtis' letter referring to my article in the issue of June 28, and I am unable to discover anything whatever to substantiate his statement that "In this paper there were so many statements that are at variance with facts and so many misrepresentations with regard to myself that I am obliged to ask you to publish this letter."

The Doctor seems to take special umbrage at my statement: "Fraser's liquor ambrosia is a proprietary preparation, the constituents of which are not known to the profession." He says further: "The entire tenor of this article makes it appear that he is doing a noble work with simple fluid extracts and an insinuation is made that I am using in my experiments a secret compound made by Fraser & Co., called liquor ambrosia."

In answer to the above, I submit a copy of the essential features of the label taken from a bottle of their preparation which I obtained this morning in an unbroken package from Fraser & Co.'s own drug store in this city. Beside this label the package contained nothing excepting a small blank reiterating the name, stating that cocain must not be employed as an adjunct, and suggesting that although the treatment had given great relief to a few cases on whom it had been tried, yet it was still in an experimental stage, and adding: "The physician who uses this bottle of medicine will confer a favor by returning this blank, properly filled out, to Fraser & Co., who will acknowledge the same." Then follows a blank for the patient's name, age, and a few points concerning the attack and the patient's heredity, and whether or not he uses alcoholic beverages or smokes excessively, etc.

The label reads: "Liquor Ambrosia (Curtis) for the Prevention of Hay Fever." Following this is a statement that this preparation is used to immunize those affected by this disease, and that cocain must not be employed as an adjunct; also full directions for administration. (Observe the Doctor's noble purpose in furnishing his prescription gratuitously, at a dollar and a quarter a bottle for the medicine, to eight thousand suffering human beings.) Following this is the name and address of the firm. In fact the stuff is put up like patent medicines, in 8-oz. bottles, for sale directly to the public, and there is nothing whatever on the label excepting the ambiguous word "ambrosia" to give any clew to its contents.

Regarding my statement that it was a proprietary preparation, I quote from the latter part of the Doctor's letter: "I was obliged to call my own preparation by a distinguishing name simply for identification. Any preparation is proprietary when it bears the makers name. Parke, Davis & Co.'s extract *Ambrosia artemesiæfolia* is proprietary just as much as Fraser's liquor ambrosia." A proprietary preparation in medicine is correctly understood, and indeed is defined by Gould as "A medicine made by a private formula, sold under a copyrighted name, or the preparation of which is not free to the pharmaceutic profession." Parke, Davis & Co.'s extract *Ambrosia artemesiæfolia* is therefore not proprietary, as the formula is published outright on every bottle. The so-called liquor ambrosia (Curtis), on the other hand, is proprietary, as it is put up by Fraser & Co. and sold under a name that conveys no idea whatever of its real contents and without explanation of its formula despite Curtis' assertion to the contrary.

He states that with every bottle dispensed is an explanation that it is a fluid extract of ragweed with aromatics. In answer to this I may say that all who have had occasion to censor the advertisements offered to medical journals must have often observed this stock statement used by manufacturers who wish to conceal the composition of their preparations. No explanation that this was a fluid extract accompanied the package that I purchased to-day or any of the other bottles that I have seen.

He complains that I did not write him to learn its constituents. I did write him some months previously about the treatment, but did not receive a satisfactory answer. I did not write him, indeed I never write to any one to ascertain the composition of their proprietary preparations, for I am not interested in so-called medicines that are advertised without a formula of their constituents.

Inasmuch as my article gave full credit for whatever he had done, and did not contain a single sentence or phrase taken from any of his writings (excepting that taken from the pharmacopeias for which I gave them credit, and which possibly the Doctor forgot was not original with him), it appears that our amiable friend is hurling naughty names a little promiscuously in the last sentence of his letter.

34 Washington Street. E. FLETCHER INGALS.

The Accuracy of European Retinoscopy.

CHICAGO, Nov. 1, 1902.

To the Editor:—In THE JOURNAL of Nov. 1, 1902, page 1107, Dr. Geo. M. Gould of Philadelphia uses the following language: "That there is probably not an 'ophthalmic surgeon' in all Europe who can use this method (retinoscopy) with accuracy shows how far we are as a profession from knowing our science, practicing our art, or doing our duty."

I admire Dr. Gould in all his scientific work and can follow his enthusiasm wherever it may lead, but I can not pass uncorrected such language from the editor of *American Medicine*, who has always advocated *accuracy* in language and diagnosis. To commit such an unpardonable sin of ignorance and unwarrantable discourtesy to foreign confrères, is to belittle his own argument. I have recently had the pleasure of a rather extens-

ive tour through some of the best of German university hospitals, and in nearly every clinic I saw retinoscopy practiced as a routine method, and instruction given to students by competent assistants in refraction with this method as a guide. Recent German periodic literature has numerous examples and illustrations of the method of teaching retinoscopy. At the Heidelberg Congress (August, 1902) Pflüger of Berne presented for approval the most elaborate apparatus I ever saw, and stated that it was only after use in his own clinic that he brought it to our notice.

In one private hospital—not belonging to a university and not used for teaching—the resident oculist spent over an hour a day in his dark room with the retinoscope estimating the refraction of the patients.

I have no doubt that the accuracy of these men would meet Dr. Gould's approval. Germans have long ceased to belittle the work of Americans, and we must avoid the error of supposing that what is done well here is therefore ignored or done ill there. ALBERT B. HALE, M.D.

103 State Street.

COMMENT BY DR. GOULD.

PHILADELPHIA, Nov. 6, 1902.

To the Editor:—In reference to the courteous note of Dr. Hale I would say that in my opinion:

1. The best method of retinoscopy, when carried out by the most expert, is not trustworthy when subjective methods are possible with intelligent people.

2. No method of retinoscopy is accurate, not even the best one, except under cycloplegia. The Germans do not use cycloplegia.

3. The only use of retinoscopy advocated in my paper was for children. The Germans do not refract little children of from 2 to 6 years of age.

4. The great value of refraction is to diagnose and correct astigmatism. The Germans do not diagnose, correct or care for astigmatism, at least in those minor degrees, which produce the greatest eyestrain.

5. The method of retinoscopy used by the Germans is the old-fashioned one of Cuignet, which is utterly inaccurate and untrustworthy. The new method of Thorington, Jackson and other Philadelphia oculists is unknown, and their books untranslated in German.

6. It is not a question of "discourtesy" or "belittling." It is simply one of accuracy in statements. Mine were, and remain, absolutely true. GEO. M. GOULD.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

REMEDIES FOR OBESITY.

RED CLOUD, NEB., Nov. 2, 1902.

To the Editor:—1. Is there a reliable remedy or treatment for obesity? 2. Is there any recent literature of any value on this subject? R. F. R.

ANS.—1. No. Each case is a problem by itself. 2. Among the more important literature is the series of articles by Von Noorden in the *International Medical Magazine* during the past few months. Some of them are abstracted in THE JOURNAL. See THE JOURNAL of July 19 and September 20, pp. 168 and 725 respectively.

LIABILITY OF PHYSICIAN WHEN FREE SERVICE IS GIVEN.

CHICAGO, Nov. 6, 1902.

To the Editor:—Is a physician liable for injuries produced by electrotherapy (including *x*-ray) if services are rendered free—at a free dispensary? As I understand a lawyer is not responsible unless he collects. W. C. E.

ANS.—A physician—or a lawyer—is as responsible for his acts when rendering his services gratuitously as when he receives remuneration for them.

PROCESS OF LAW AGAINST UNRECORDED PHYSICIAN.

NEW JERSEY, Nov. 10, 1902.

To the Editor:—There is a regular physician in this county who has been practicing for eight or nine years and has never been registered in the county clerk's office as required by law. Which is the proper way to go about it so as to have him comply with the law?

—. —.

ANS.—Unless the state law of New Jersey exempts persons practicing before 1894 and the party in question comes under this provision, it would seem to be a case for the district attorney to investigate. The duty of lodging a complaint with him would seem to us to fall on the county medical society, though, of course, anyone might do so. Has the physician's attention been called to the oversight? Your county attorney can give you the exact law.

Book Notices.

TEXT-BOOK OF ANATOMY. Edited by D. J. Cunningham, F.R.S., M.D. (Edin. et Dubl.), D.Sc., LL.D. (Glasg. et St. And.), D.C.L. (Oxon.), Professor of Anatomy and Chirurgery, Trinity College, Dublin. Illustrated with 824 Wood Engravings from Original Drawings, Many Printed in Colors. Cloth. Pp. 1309. Price, $1.75. New York: The Macmillan Co. 1902.

The medical student of to-day has a much broader range of choice in text-books than was the case a few years ago, and the text-books, moreover, are vast improvements on those that preceded them. This is true of all recent text-books on anatomy and of the present one in particular. While it may not be more generally convenient or better for the student than the later editions of Gray and Gerrish, it has the advantage of being in some respects a little more up to date. The editor speaks in his preface of the disadvantages of the composite work by different authors from the possibility of overlapping of subjects or differences of opinion, but we see nothing in the present work that would detract from its importance on these accounts. The different subjects are by authors of well-known reputation and are most ably handled. This work differs from others in its less conventional method of description and arrangement. Thus the topical relations of the viscera have been treated with reference to the most recent methods of hardening and preparation and the descriptions are decidedly the better for it. As for the special parts of the work we would speak of that on general embryology which in some respects is more complete and up to date in regard to the most recent discoveries than anything we have seen in the line of text-books of anatomy. The same may be said also of other parts. The illustrations are admirable, many of them schematic, and are the better for this reason. The use of color is introduced to a great advantage where it is employed. The book is one that can be honestly recommended.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS, Comprising Ten Volumes of the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume IX. Physiology, Pathology, Bacteriology, Anatomy. Pathology Edited by W. A. Evans, M.S., M.D., Professor of Pathology, College of Physicians and Surgeons, Chicago. Bacteriology Edited by Adolph Gehrman, M.D., Professor of Bacteriology, College of Physicians and Surgeons, Chicago. August, 1902. Cloth. Pp. 212. Price, $1.25. Chicago: The Year-Book Publishers.

This book consists of series of abstracts of articles that have appeared within a year or so of its issue, upon subjects connected with physiology, pathology, bacteriology, anatomy. We fail to understand why the names of W. T. Eckley and B. Fantus, authors of the sections on anatomy and physiology respectively, are not mentioned on the title page as well as those of the reviewers of pathology and bacteriology. The work seems well done as far as it goes. The careful reader will miss an author's index, which is especially desirable in works of this kind. In pathology the work of American investigators is given full share of the space. On the whole this volume compares favorably with its predecessors.

A TEXT-BOOK OF HISTOLOGY AND MICROSCOPIC ANATOMY OF THE HUMAN BODY, Including Microscopic Technic. By Dr. Ladislaus Szymonowicz, A.O., Professor of Histology and Embryology in the University of Lemberg. Translated and Edited by John Bruce MacCallum, M.D., Johns Hopkins University, Baltimore. Illustrated with 277 Engravings, Including 57 Plates in Colors and Monochrome. Cloth. Pp. 435. Price, $4.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

This book in all probability will take its place among the first favorites of the text-books dealing with the subject of which it treats. There is no criticism to offer of the manner in which the subject is presented. Possibly the section on microscopic technic will be found rather short and not complete enough to replace satisfactorily special works on technic. The publishers have done their part well. The illustrations are all creditable, some being excellent. The translator and editor has given due attention to recent American investigations in histology and microscopic anatomy.

Marriages.

CHAUNCEY T. SCUDDER, M.D., to Miss Annie R. Auld, at Baltimore, October 29.

EDWARDS H. PORTER, M.D., to Miss Harriet Noble, both of Tiffin, Ohio, October 29.

ROLAND A. FELT, M.D., to Miss Florence G. Bullen, both of Perry, Okla., October 29.

CRAIG BARROW, M.D., Savannah, Ga., to Miss Alice Barker of Atlanta, Ga., October 30.

THEODORUS BAILEY, M.D., to Miss Alice Van B. Foos, both of New York City, November 1.

BENJAMIN HARBASON, M.D., to Miss Layla Kritz, both of Waveland, Ind., November 5.

WALTER LEE STRAUGHAN, M.D., to Miss Nelle Kritz, both of Waveland, Ind., November 5.

L. G. NOEL, M.D., to Miss Augusta Dickel Jonnard, both of Nashville, Tenn., October 30.

JAMES W. STONE, M.D., to Miss Virginia Lockett, both of Henderson, Ky., November 5.

J. EMMET LEAHY, M.D., to Miss Margaret Eugenie Slattery, both of Chicago, November 1.

CARL L. SPOHR, M.D., to Miss Hattie Wirthwein, both of Columbus, Ohio, November 4.

OSCAR L. HOLMES, M.D., Stewart, Ga., to Miss Cleo Aiken of Covington, Ga., October 22.

PHILIP FOX, M.D., Madison, Wis., to Miss Katherine Brigham of Milwaukee, October 29.

SAMUEL GORDON TODD, M.D., Neenah, Wis., to Miss Jennie Reyniers of Chicago, November 3.

ABRAM J. BARKER, M.D., to Miss Lucy Burr Wadhams, both of Torrington, Conn., October 28.

HOMER J. HALL, M.D., Franklin, Ind., to Miss Mary Hadley of Bloomingdale, Ind., November 6.

CHARLES M. JACOBS, M.D., Chicago, to Miss Helen Thalheimer of Richmond, Va., October 27.

Deaths.

Edgar Pumphrey Cook, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1854, died suddenly at his home in Mendota, Ill., from angina pectoris, October 31, aged 71. His father was a physician, and two of his sons are practicing medicine in Mendota, Ill. He began practice in Mendota in 1855, succeeding to the practice of his father, and for 45 years practiced in La Salle County. During the Civil War he served as surgeon of an Illinois regiment. He was a member of the Illinois State Medical Society, its president in 1879, and chairman of its judicial council at the time of his death. He was one of the early presidents of the La Salle County Medical Society, twice president of the Northern Central Illinois Medical Association and a member of the American Medical Association, American Association of Railway Surgeons, American Public Health Association, and other organizations, and was an honorary member of the Chicago Physicians' Club. He was a delegate to the ninth and tenth International Medical congresses. Dr. Cook was a pioneer in advocating stricter requirements and a more thorough course in medicine. As early as 1854 he urged the adoption of a five years' course. He was a progressive and an enthusiastic practitioner who, although living in a small town, kept abreast of the advances in medical science. He performed the first successful laryngotomy for tumor in the west, and was one of the first to operate for ectopic gestation. For many years he was local surgeon of the railways which cross at Mendota. He was earnest as a citizen, and served as a member of the city council, and caused the adoption and construction of the present sewage system of the city. He also served on the public library board and the school board. In March, 1900, he had his first attack of angina pectoris, and was never thereafter able to resume his professional work.

Frederick A. Packard, M.D. University of Pennsylvania, 1885, died at Pennsylvania Hospital, Philadelphia, November 1, aged 40. He was a son of Dr. John H. Packard, who survives him. He was graduated in medicine in 1885, at the head of his class, taking three first prizes and one second prize. He served as interne in the University and Pennsylvania hospitals, and then was assistant to the late Dr. William Pepper for three years. He served on the visiting staff of the Philadelphia, Episcopal, Methodist, Children's and Pennsylvania hospitals, and gave especial attention to diseases of children. His contributions to the literature were numerous and valuable. Those especially noteworthy are those on diseases of the heart, typhoid fever, trichinosis, Paget's disease and visceral relations of tonsillitis. He was a member of the American Medical Association, the Association of American Physicians, American Pediatric Society, Philadelphia College of Physicians, Philadelphia County Medical Society, Philadelphia Neurological Society and president of the Philadelphia Pathological Society and the Philadelphia Pediatric Society. In 1901 he was elected a trustee of the University of Pennsylvania, and during the college year 1901-1902 lectured on therapeutics in the University of Pennsylvania, during the absence abroad of Dr. Horatio C. Wood. In addition to his exceptional professional talent which had already placed him among the foremost clinicians of the east, he possessed a singular charm of personality. In October he was attacked by typhoid fever, followed by appendicitis, for which an operation was performed. On October 31 perforation occurred, and the operation performed, therefore, was of no avail, as he died the next day from exhaustion.

Francis F. Davis, M.D. University of Michigan, Ann Arbor, 1867, a member of the American Medical Association, and one of the most eminent professional men of western Pennsylvania, died suddenly from organic heart disease, in Oil City, while making a professional call, October 31, aged 64. He was a native of western Pennsylvania; served during the Civil War as assistant surgeon of the One Hundred and Twenty-first Ohio Volunteer Infantry. At the close of the war he settled in Oil City. He was a member of the International Association of Railway Surgeons, Medical Society of the State of Pennsylvania, Venango Medical Society and Oil City Academy of Medicine.

Frank A. Holland, M.D. University of Minnesota, Minneapolis, 1886, for five years on the staff of hospitals in St. Paul and Minneapolis, then an assistant surgeon in the army for two years, and thereafter a practitioner of Dubuque, Iowa, died at his home in that city, October 29, from typhoid fever, after an illness of six weeks.

James Johnston Bell, M.D. Rush Medical College, Chicago, 1886, one of the founders of Kedzie Hospital, and one of the best-known practitioners of northwest Chicago, died at St. Luke's Hospital, November 4, after a long illness from gliosarcoma of the brain, for which he underwent an operation the day before his death, aged 41.

Robert C. Kedzie, M.D. University of Michigan, Ann Arbor, 1851, during the Civil War surgeon of the Twelfth Michigan Infantry, and for more than 40 years professor of chemistry at the Michigan Agricultural College, Lansing, died at his home in that city, November 7, aged 79.

W. Clark Allen, M.D. Northwestern University Medical School, Chicago, 1894, surgeon at the Kedzie Hospital, Chicago, died suddenly from hemorrhage of the lungs after alighting from a street car in front of the hospital, November 4, aged 37.

John James May Angear, M.D. Rush Medical College, Chicago, 1860, one of the founders and faculty of the College of Physicians and Surgeons, Chicago, died at his home in Chicago, November 8, from chronic endocarditis, aged 73.

Charles M. Bethauser, M.D. Starling Medical College, Columbus, Ohio, 1882, a well-known clergyman and physician of Columbus, died at his home in that city, October 30, from liver disease of long standing, aged 68.

Andrew J. Manville, M.D. Bellevue Hospital Medical College, New York, 1866, one of the oldest physicians of Bowling Green, Ohio, was instantly killed by being struck by an express train, at Custar, November 3, aged 68.

John H. Abbott, M.D. Jefferson Medical College, Philadelphia, 1872, an esteemed citizen and twice mayor of Fall River, Mass., died at his home in that city, November 1, from pneumonia, after a short illness, aged 54.

Gerard M. Muller, M.D. University of Utrecht, Holland, was found unconscious in his rooms at Grand Rapids, Mich., October 31, and was taken to Butterworth Hospital, where he died, November 3, aged 70.

Andrew J. Schmidt, M.D. McGill University, Montreal, 1886, died suddenly at his residence in Cedar Rapids, Iowa, from heart disease consequent on rheumatic arthritis, November 3, aged 39.

Robert L. Wood, M.D. Kansas City Medical College, 1873, son of the late Dr. Joseph Wood of Kansas City, died in that city, from fatty degeneration of the heart, October 31, aged 62.

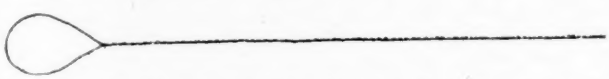
John C. Drake, M.D. Western Reserve University, Cleveland, Ohio, 1868, died at his home in Oakley, Mich., November 1, aged 60.

New Instrument.

A WIRE LOOP FOR AURAL SNARES.

HAROLD WILSON, M.D.
DETROIT.

In using the snare for the removal of aural polypi, it often has to be rethreaded several times during a single sitting, a procedure which is always more or less tedious or annoying. I have devised a loop with the ends of the wire twisted so that it may be inserted into any snare with a single open canula with very little trouble. A piece of malleable steel wire No.



36 or 40 (about a foot in length for the Blake snare) is doubled and twisted (best in a small lathe, holding the loop end between the fingers), leaving the loop of any desired size. These loops are so very easy to make that they are inexpensive, and may be made up and kept on hand in sufficient numbers to have them always ready.

32 West Adams Avenue.

Medical Organization.

How to Encourage Scientific Work in County Societies.

The enthusiasm with which the work of organization is being taken up all over the country is certainly most encouraging, and it is not the time to throw cold water to cool off this enthusiasm. And yet it is the time to call attention to the fact that the work may all come to naught if we do not recognize the necessity of doing something to keep the majority of the county societies from becoming dormant, if not extinct, by making them of practical value to their members. The necessity of assistance from those outside of a county, in the creation of county societies, is now happily recognized and acted on by most of the state bodies. It must also be recognized that if these societies are to be made useful the same outside assistance must be kept up. Spasmodic efforts at organizing societies have been going on for years, and these have been temporarily successful. But once organized the weaker—and not seldom even the stronger ones—sooner or later died out.

The gardener who plants a flower and neither waters nor cultivates it would be considered very foolish. The flower might grow if the soil and environment were right.

There are various ways in which a society may be made advantageous to its members, and one of the most important is that it shall be of benefit as an educational institution and as a help in scientific work. It is in this that the state society should recognize its first duty. When the profession is well organized and the machinery for such work is completed, we may hope to see undertaken a sort of post-graduate work, something on the plan of the university extension movement, modified, of course—of which more in the future. At the present time, however, the adoption of some such work as outlined in these columns last week by Dr. Leartus Connor, should be immediately undertaken. In those states that have already organized, and have adopted the councilor system, this work should be undertaken by the councilors, and without waiting for instructions from the state body. It is their duty to assist in and help make effective the scientific functions of the county society. And in no simpler or more economical way can they do this than by getting these bodies to invite outsiders to aid them by reading papers, etc. The councilors should co-operate by getting volunteers to prepare papers on subjects of practical interest. There will be no trouble to get men to do this, and undoubtedly the societies would gladly welcome such outside aid in making their meetings interesting. There would be no objection to one reading the same paper to a half a dozen or to a score of societies, and thus such a one would be encouraged to spend time in preparing something good to present. The invitation to take part in this work should not be limited to men with a reputation or to those living in a populous center, but, on the other hand, the country practitioner would in some respects be better. Let it be a mutual exchange of talent.

There is no need of argument to prove the advantage of such work. The more successful societies are doing it to-day. The largest county society in the country, the Chicago—Cook County—Medical Society, every few weeks invites men from other parts to read papers. Flourishing societies in Boston, New York, Philadelphia, Buffalo, Cleveland, Cincinnati and other large centers are continually inviting outsiders, and find it an attractive feature, but above all it brings new ideas, new inspirations. How much more is this needed in the smaller societies in the country districts! In societies of only twenty or thirty members—and not a third willing to prepare good papers—the necessity for outside inspiration is surely recognized by all. Even in the society with good workers the monotony of meeting the same men and hearing the same subjects discussed from the narrow viewpoint of a single locality is bound to result in a gradually decreasing attendance, and finally in total failure.

We sincerely hope that the councilors will take this matter up, individually if not collectively. In the states which have not reorganized, a "Committee on Scientific Work" should be created. But even in these states the president or secretary of the state society can take this work on himself; he need not fear to undertake it even if he has not been ordered to do so.

Let the good work begin now.

Medical Defense.

While we believe that there are functions belonging to medical organizations of more immediate consequence than the defense of its members against malpractice suits, nevertheless this is a matter of decided importance, and we are therefore glad to note that both state and county societies are taking it up. At the recent meeting of the New York State Medical Association that body adopted resolutions endorsing medical defense by its county branches. The Chicago Medical Society has a committee at work looking to the adoption of medical defense as one of its functions. The Philadelphia County Medical Society at its last meeting took up the work and adopted the following amendment to its constitution:

FOR MEDICAL DEFENSE.

Section 1. Within 15 days after the business meeting in January, the Board of Directors shall appoint an attorney-at-law for the term of one year, who, in addition to representing this society in all suits for malpractice and threats against its members as hereinafter provided, will assist the District Attorney in prosecuting illegal practitioners of medicine and representing this society in other legal affairs.

Sec. 2. The Board of Directors may, on request and in compliance with the conditions hereinafter named, assume the defense of suits for alleged malpractice brought against members of this society.

Sec. 3. The Board of Directors shall not undertake the defense of any suit based upon acts prior to the qualification of the accused as a member of this society.

Sec. 4. Any member desiring to avail himself of the provisions of this article shall first present his case to the Board of Censors, who shall decide upon the validity of the claim. He then may make application to the Board of Directors through the Secretary, shall sign a contract renouncing his own and vesting in the Board of Directors sole authority to conduct the defense of said suit, and shall make such other agreements as the Board of Directors may require. Provided, that nothing in the foregoing shall conflict with united action in the defense by the officials of any corporation organized for this specific purpose, with which a member may be connected.

Sec. 5. The Board of Directors shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical expert services and to pay all necessary expenses of the accused. Provided, that if the accused is insured in a corporation organized for the legal and financial defense of physicians, the foregoing responsibility of the Board of Directors may be divided with said corporation. The Board of Directors shall not obligate the society to the payment of any damages awarded by decree of court or on compromise.

Sec. 6. The Board of Directors shall have authority to name the sum for the compensation of the attorney.

Western Central Medical County and District Society.

Physicians of Stevens, Big Stone, Wilkin, Traverse and Pope counties (Minn.) met at Morris, Minn., October 24 for the purpose of organizing a district medical society as a branch of the state society. Dr. Herbert L. Hulburd, Morris, was chosen president; Dr. Charles Christenson, Starbuck, vice-

president; Dr. Charles Bolsta, Ortonville, secretary, and Dr. James R. Elsey, Chokio, treasurer. The meetings will be held quarterly, the next one being held in Morris on the second Wednesday of January, 1903.

Genesee County (Mich.) Medical Society.

This society was organized October 28 at a meeting of physicians of the county held at Oak Grove Hospital, Flint, as a branch of the Michigan State Medical Society. Twenty-three physicians were enrolled as members and there were also in attendance two delegates from the Oakland County Medical Society. The following officers were elected: Dr. Charles S. Wheeler, Flushing, president; Dr. Lynch, Flint, vice-president, and Dr. Henry R. Niles, Flint, secretary and treasurer.

Gratiot County (Mich.) Medical Society.

About fifteen physicians of the county met at Alma October 30 and organized this society, to be a branch of the Michigan State Medical Society. Dr. Albert E. Bulson, Jackson, president of the state society, and Drs. Leartus Conner, of Detroit, and William T. Dodge, Big Rapids, members of the council of the state society, were present and assisted in the organization. Dr. George F. Butler, Alma, was elected president; Dr. Stiles Kennedy, St. Louis, vice-president, and Dr. Willard M. Weller, Ithaca, secretary and treasurer. Drs. Kennedy, Scott and Brainerd were appointed to draft a constitution and by-laws.

Nebraska.

At the last meeting of the Nebraska State Medical Society the matter of organization was discussed, but nothing could be done from the fact that the constitution could not be amended without the matter laying over for a year. However, a committee was appointed to revise the constitution and by-laws in accordance with the plan recommended by the American Medical Association, and also to take preliminary steps in organizing, if in the judgment of the committee it was thought best. This committee met November 6, at Omaha, and, after a thorough study of the work and a conference with members of the profession outside of the committee, it was decided to recommend the adoption of the Constitution and By-laws for State Societies prepared by the Committee on Organization of the American Medical Association, with certain minor modifications.

The work of organization has been taken up in several counties, although not as yet systematically. The Lincoln Medical Society, which for some years has been in a semi-dormant condition, recently passed a resolution to disband, provided a county organization was created. On November 4, the Lancaster County Medical Society was organized, to take the place of the Lincoln Medical Society. Over half of the physicians of the city and county joined at this first meeting, and it is expected that soon practically all of the eligible physicians of the county will be members of the county society.

On Tuesday of this week the Omaha Medical Society was to consider the advisability of changing its name so as to make it a county society and to reorganize.

Societies.

COMING MEETINGS.

Indian Territory Medical Association, Muskogee, Dec. 2-3, 1902.
Western Surgical and Gynecological Association, St. Joseph, Mo., Dec. 29, 1902.

Upper Des Moines Medical Society.—The next meeting of this society will be held at Estherville, Iowa, in February, 1903.

New York Celtic Medical Society.—This society, at its recent annual meeting, elected Dr. Thomas F. Reilly president, Dr. John J. McCoy secretary, and Dr. Michael C. O'Brien treasurer.

Asociacion Medica de Puerto Rico.—The medical men of the island met at San Juan, September 21, and formed this association, with Dr. M. Quevedo Baez, president; Dr. Jose N. Carbonell, secretary, and Dr. Rafael Valez y Lopez, trustee, all of San Juan.

Union District Medical Society.—This society met at Hamilton, Ohio, October 25, and elected Dr. William S. Alexander, Oxford, Ohio, president, and Dr. Walter D. Hancock, Millville, Ohio, secretary and treasurer. The meeting for 1903 is to be held in Rushville, Ind.

Southern Kentucky Medical Association.—This association, which met at Hopkinsville, October 24, before adjourning, to meet next year at Bowling Green, elected Dr. Frank M. Stites, Hopkinsville, president; Dr. William W. Ray, Hopkinsville, vice-president, and Dr. Lee P. Trabue, Elkton, secretary-treasurer.

Buffalo General Hospital Alumni Association.—The ex-internes of the Buffalo General Hospital met at the Hotel Niagara recently and formed an alumni association. After a banquet, officers were elected as follows: President, Dr. DeVillo W. Harrington; vice-president, Dr. Peter W. Van Peyma; secretary-treasurer, Dr. William I. Thornton, and executive committee, Drs. Thomas B. Carpenter, Edgar R. McGuire, and Edwin R. Gould, all of Buffalo.

Tri-County (N. J.) Medical Society.—The fourth annual meeting and banquet of this society, which includes in its territory the counties of Wayne, Sussex and Morris, was held at Washington, October 14. The following officers were elected: Dr. Theophilus H. Andress, Sparta, president; Drs. Isaiah W. Condict, Dover, and John C. Johnson, Blairstown, vice-presidents; Dr. Charles B. Smith, Washington, secretary, and Dr. Frederick W. Flagge, Rockaway, treasurer.

Albany American Academy of Medicine Club.—A division of the American Academy of Medicine was formed in Albany, October 29. Dr. Charles McIntire of Easton, Pa., the president of the academy, explained the scope and functions of the academy. During the evening a local division was organized by the election of Dr. James F. Barker as permanent president and Dr. Charles M. Culver as permanent secretary, who are constituted the executive committee with power to act. This is the first permanent division to be organized in America.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Monthly Meeting, held Oct. 7, 1902.

The President, Dr. Wendell Reber, in the Chair.

Post-Diphtheritic Paralysis Affecting the Nose and Throat.

DR. CARLE LEE FELT read this paper, in which he divided the causal factors into three groups: the bacilli, the toxin and a by-product, the action of which is limited to the nerve tissue, called "toxone," the latter agent being accredited to Dr. Dundas Grant with being responsible for the paralyses following the mild diphtheritic cases treated with antitoxin. The condition *per se* may also be considered under three headings: 1. Muscle degeneration. 2. Localized neuritis and degeneration. 3. Central nervous destruction and degeneration.

The most frequent site of this condition is the pharynx, 40 per cent. of the cases being confined to this region, and in 12 per cent. the palate and eye muscles are affected, while the muscles of mastication are very rarely involved or the senses of taste, hearing and smell impaired. The location of the membrane would seem to have very little influence over the extent of the paralysis. From observations made by Woodhead on 1,362 cases of post-diphtheritic paralyses, the time of the onset of the disease would seem to be from 4 to 55 days, varying from 5 to 55 in the palate; 4 to 17 in the ocular-motor muscles; 5 to 10 in the heart, and 10 to 14 in other parts of the body, the duration extending from a few days to months and in rare instances no recovery taking place. The restoration of function depends on the nature and extent of the damage and the treatment of the case, the latter of which may be divided into preventive and curative measures.

That antitoxin prevents and does not cause paralysis is now generally conceded, and this opinion is borne out by the experiments on the lower animals. The ideal method of using this remedy is to inject it at the time the disease is acquired in a sufficient amount to completely neutralize the patient, but even this will not prevent the paralyses caused by streptococcic infection, which is so often present. Strychnin, electricity, tonic baths, general massage, rest in bed, nutritious and easily assimilated diet and treatment tending to secure perfect action of the skin, kidneys and bowels are valuable adjuncts in the treatment of these conditions, but the use of local antiseptics was not thought to be of much import.

Post-Diphtheritic Paralysis Affecting the General Nervous System.

Dr. Luther C. Peter stated that the frequency of the palsies is in direct proportion to the severity of the general infection, notwithstanding that occasionally a severe paralysis may follow a mild diphtheria. The most important etiologic factors are age and the location of the membrane, Gowers claiming that the largest per cent. of cases occur in adults, while the experience of other observers tend to a contrary opinion, the latter holding that most of the cases occur between the ages of 5 and 6 years. From the observations by Myers, it would appear that about one-fifth of the cases are followed by paralysis. That the paralysis may involve almost any portion of the body, particularly the nerves, spinal cord and brain; and muscles, especially the myocardium, is now pretty generally recognized, as is also the fact that the condition is caused by a toxin elaborated in the body by a diphtheria bacilli, the blood stream acting as a conveyance for the toxic agent. The localization of the paralysis can no doubt be explained by the proximity of the affected organ to the source of infection. Diversity of opinion exists as to whether the primary seat of the lesion is in the peripheral nerve or in the cord, and the more conservative view would seem to be that the entire neuron is pathologically affected, the change being perceptible only in the peripheral nerve.

The symptoms usually noticed during the second or third week of the attack, when convalescence has been fairly established, are progressive loss of strength, and wasting of the muscles of the extremities and trunk, if the latter is involved. In other cases, after the patient is up, may be observed regurgitation of liquids through the nose, nasal twang of the voice and difficulty in walking, which may terminate in the patient becoming bedridden, with loss of control of the bladder and bowels and paralysis of the respiratory muscles and heart. The knee-jerks are always affected, and their absence has been noted in all cases of diphtheria, with or without paralysis. Usually, however, the disease is not so severe, and is generally completely cured by four to eight weeks of rational treatment. Instead of being general the paralysis may be localized, in order of the frequency of their occurrence being palatal, ocular, cardiac and diaphragmatic. The cardiac affection is now thought to be secondary at least to functional disturbance of the vagi and possibly due to organic changes in the nerve structure, being most frequent between the ages of two and nine years and occurring from the second to the thirty-sixth day of the disease, the symptoms indicatory of its onset being cardiac irregularity, bradycardia, tachycardia, a lowering of the temperature and vomiting. Eighty per cent. of the fatalities following post-diphtheritic paralysis are due to this variety of the disease. Diaphragmatic paralysis furnishes about 13.7 per cent. of the fatalities, occurring principally between 2 and 6 years of age, the symptoms being dyspnea, retraction of the upper abdomen during inspiration, weakness of the voice and a tendency to the accumulation of mucus in the trachea and bronchial tubes.

The important factors in the differential diagnosis of the condition are the history of a previous attack of diphtheria, the conditions present at the onset of the attack, the extent of the wasting, and in the cerebral type the preceding convulsion. The prognosis is usually good, the greatest mortality being in the cardiac and diaphragmatic cases.

In regard to treatment, antitoxin was thought to be the first and foremost remedy, its value as a preventive being fully established by the experiments of Rainy on guinea-pigs. Absolute rest in bed during the primary disease was considered imperative, and many of the cases of paralysis were felt to be due to premature activity on the part of the patient. The use of iron and strychnia internally, and in the cardiac cases of strychnia hypodermatically, was thought to be important.

Post-Diphtheritic Ocular Paralysis.

Dr. P. N. K. Schwenk read a paper, in which he stated that the post-latent stage of diphtheria is almost invariably characterized by ocular paralysis. Few muscles are usually affected at the same time, the ciliary muscles being the most commonly and the sphincter muscles the most rarely affected. Post-diphtheritic ocular paralysis is usually bilateral. Paralysis of the sphincter irides is rare.

These attacks are usually observed in from two to six weeks after the attack of diphtheria, and require about the same length of time for a cure, the prognosis being more favorable in the young than in the older patient. There is an inability to distinguish near objects and double vision may or may not be present. The severity of the primary disease bears no relation to the ocular paralysis, and in the author's opinion the condition is produced by the action of the toxins on the peripheral nerve centers.

Discussion.

Dr. Charles W. Burr believed the chief causative factor in these cases of diphtheritic paralysis was multiple neurosis. Regarding prognosis, the most important factor to determine is whether it is a multiple neuritis or a cerebral affection, in the former case the prognosis being very good, while in the latter it is very poor. The most important feature in the treatment is absolute rest.

Dr. R. W. Bemis did not believe antitoxin should be used to the exclusion of everything else, as he felt that muscle changes take place as soon as the local manifestations are visible, thus the antitoxin can not be given early enough to secure the effect which is produced in the experiments on guinea-pigs, in which the diphtheritic toxin is injected and immediately followed by an injection of antitoxin. While he believed that antitoxin was an important factor in the cure of diphtheria itself, he felt that it had but little effect on the paralysis.

TRI-STATE MEDICAL ASSOCIATION OF ALABAMA, GEORGIA AND TENNESSEE.

Fourteenth Annual Meeting, held in Birmingham, Ala., October 7 to 9, 1902.

The President, Dr. John C. La Grande, Birmingham, in the Chair.

Welcome.

The delegates were welcomed to Birmingham by Mayor W. M. Drennen. On behalf of the Jefferson County Medical Society the association was welcomed by Dr. R. M. Cunningham, Big Sandy, Tenn., representing Dr. Cunningham Wilson, president of the county society, who was prevented from being present by illness.

Sociology.

The first day's sessions were taken up with sociologic questions.

Dr. C. F. Douglass, Douglassville, Ga., spoke of "Sociology and Industry." He descanted especially on the question of insobriety and presented arguments on the evil effects of alcohol and the methods of obviating this evil.

Dr. David L. Wilkinson, Montevallo, in a paper entitled "Some Further Remarks on the Medical Supervision of the Education of Boys and Girls," recommended that there be a physician on every educational board with a salary sufficiently large to warrant him in devoting a considerable portion of his time in looking after the health of the children.

Dr. Louis Edelmann, Huntsville, Ala., caused a good deal of discussion by his paper on "The Negro as a Criminal and His Influence on the White Race." The author stated that the negro had a great influence over the white race, and that as a whole it was for the bad, and argued that the state should have a farm and should rigidly enforce the vagrant law compelling all negroes without work to go to the farm. The statements of the chiefs of police of the south that there were three negro criminals to one white criminal were given by the author, who also urged the establishment of a reformatory for the children of both white and colored races as a preventive of crime.

Prof. Joel Du Bose, Birmingham, read a paper on "Dynamic Sociology," and the symposium closed with a paper on "Crime and Its Causes," by Dr. Hugh L. Appleton, Center, Ala.

The annual banquet was attended by about 200 physicians, Dr. John C. La Grande, Birmingham, presiding as toastmaster.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Michael Hoke, Atlanta, Ga.; vice-presidents, Drs. Cola H. Peete, Macon, Ga.; William L. Nolen, Chattanooga, Tenn., and Lewis C. Morris, Birmingham, Ala.; secretary (re-elected), Dr. F. Trester Smith, Chattanooga, Tenn., and treasurer, Dr. George R. West, Chattanooga, Tenn.

Tuberculosis Congress.

The following resolution was presented and adopted by the society: *"Resolved*, That this society endorse the object and aims of the American Congress on Tuberculosis to meet in St. Louis, in July, 1904." Drs. Seale Harris, Union Springs, Ala.; Robert H. Tatom, Chattanooga, Tenn., and Cola H. Peete, Macon, Ga., were appointed delegates to represent the society at the congress.

Revision of Constitution.

A committee of three, consisting of Drs. Willis F. Westmoreland, Atlanta, Ga.; William G. Harrison, Talladega, Ala., and Frank Trester Smith, Chattanooga, Tenn., were appointed to revise the constitution.

For Good Roads.

In order to show the interest the medical men are taking in the matter of good roads the following resolutions were passed:

Resolved, That the members of the Tri-State Medical Association of Alabama, Georgia and Tennessee are very much interested in the building of better roads in the states represented by this association.

2. That we urge this community to lend every support possible to the good roads convention of north Alabama, which is to meet October 2 in this city.

3. That this medical association will lend any aid possible to the convention referred to.

4. That a copy of these resolutions be sent to the secretary of the goods roads convention in north Alabama.

The convention decided to meet next year in Atlanta, Ga.

SOUTHERN TRI-STATE MEDICAL ASSOCIATION.

Third Annual Convention, held in Dallas, Texas, October 7 and 8, 1902.

The President, Dr. John S. Turner, Terrell, Texas, in the Chair.

Education of Feeble-Minded Children.

DR. CHARLES T. WILBUR, Kalamazoo, Mich., by invitation, read a paper on this subject, in which he said that he considered the proper education of feeble-minded children one of the most important subjects before the medical world to-day. Each state should take care of its children of feeble mind and should have a place especially adapted for their education. The most suitable place for an institution of this kind would be in the country, where the children can obtain the advantage of fresh air and exercise. They should be taught to beautify the grounds, cultivate the farms, and should also be taught the higher branches of education as these serve to influence the mind toward nobler things. From an institution of this kind the state could turn out citizens of the best kind, and instead of being a care to the public all their lives, they would be able to take care of themselves.

Medical Legislation.

In a discussion of the paper by Dr. James Orr, Terrell, Texas, on "The Medical Profession and Medical Legislation," Dr. Samuel E. Milliken, Dallas, urged the importance of the association adopting a constitution in accord with that of the American Medical Association, and Dr. Frank Paschal, San Antonio, Texas, expressed himself as heartily in favor of a state board of health, but said that he did not believe in allowing legislators to make laws relating to the medical profession when the legislators did not understand the first principles of the medical profession.

President's Address.

The retiring president, Dr. John S. Turner, Terrell, Texas, in his annual address, spoke of men who had greatly benefited humanity by research in the field of medicine and of the great advance that had been made in that field in the past few years.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. James C. Loggins, Ennis, Texas; vice-presidents, Drs. R. J. Grabill, South McAlester, Ind. Ter.; Joseph B. Relater, Oklahoma City, Okla., and Frank Paschal, San Antonio, Texas; secretary and treasurer, Dr. Charles M. Rosser, Dallas, Texas.

CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA.

Seventeenth Annual Meeting, held at New Haven, Conn., Oct. 28 and 29, 1902.

Under the Presidency of Dr. H. M. Bracken, Minneapolis.

(Continued from page 1203.)

Summer Resorts.

DR. C. A. LINDSLEY, New Haven, Conn., read a paper, treating this subject under the following heads: The tented camp; the million dollar hotel; the variety of guests who are entertained at them; their temporary occupation; the brevity of the visits of the great majority of those who frequent them, and their sense of responsibility while being there; the enormous increase of population when the summer influx is compared with the permanent residents of the remainder of the year; the colonies of cottages clustered in close proximity and the risk of unsafe results to health from all these peculiar conditions.

Quarantine Against Yellow Fever in Cuba.

This paper was read by MAJOR W. C. GORGAS, U. S. A. He described the quarantine methods in use during 1901.

Early in 1901, the army board put forward the theory which they had demonstrated, and which Dr. Finlay had, for the past twenty years, maintained, that the mosquito was the means by which yellow fever was conveyed from patient to patient, and the only means, and that it was not conveyed by fomites and articles soiled by the yellow fever patient. As the result of the acceptance of this theory by the sanitary department, changes were made in the quarantine regulations. If the disease could only be transmitted from a sick person by a mosquito, there would be no occasion to give any care to the bedding, fabrics, etc., soiled by the sick person, or that from the infected locality. In accordance with this view, the quarantine regulations of the city were modified. When a case was reported as yellow fever, the quarantined area was at once screened at public expense, with the idea of keeping infected mosquitoes in, and of keeping out all mosquitoes that had not been affected. When the case terminated, all the mosquitoes were killed by fumigation with pyrethrum powder, but no attention was given to clothing, fabrics, etc. Sulphur, tobacco and other substances are very much more deadly to the mosquito, but it was feared that if the people were caused too much inconvenience, it would result in cases being concealed, and this would defeat the success of the work.

The author believes that under the system of inspection, as enforced in Havana during 1901, yellow fever would no more frequently get into the United States than it has during the past year of rigid quarantine. The relief to commerce under such a system would be enormous. With present knowledge and experience he advocated as a quarantine against yellow fever, both land and maritime, that infected vessels, or vessels coming from an infected port, be carefully fumigated, so as to kill all mosquitoes in every part of the vessel. This would apply to ships on water and all cars, etc., on land. That the passage of merchandise, baggage, etc., be interfered with in no way whatever. That passengers, when sick, be quarantined and isolated; that all other passengers be allowed to pass freely; that non-immunes from infected points be seen once a day by a medical inspector, and if at the end of five or six days they are well, that they be released from all surveillance.

Method of Stamping Out Yellow Fever Suggested Since 1899.

DR. CHAS. J. FINLAY, Havana, Cuba, contributed a paper on this subject. His conclusions were:

1. That the germ of yellow fever is only pathogenous for human beings when introduced by inoculation.

2. That the regular process by which the inoculation of a germ is accomplished in nature is through the bites of the *Stegomyia fasciata*, the insect having previously become contaminated through the act of biting yellow fever patients within the first five or six days of their attack.

3. That, although the bites of a recently-contaminated mosquito can only produce a mild attack of yellow fever or simply confer latent immunity without eliciting any pathogenic reaction, the bites of the same insect, when its contamination dates back from several days or weeks, may be expected to produce severe or fatal attacks of yellow fever.

4. That the yellow fever mosquitoes, after they have once been contaminated, retain the power of inoculating the disease during the rest of their lives if they have chances of biting non-immunes.

5. That the essential conditions for stamping out yellow fever from an infected locality are: (*a*) to protect yellow fever patients from the bites of the special yellow fever mosquitoes; (*b*) to destroy all mosquitoes which may have reached yellow fever patients; (*c*) not to allow non-immunes to enter the infected zone until the last of the contaminated insects may be supposed to have died; (*d*) to lessen the chances of propagation by adopting adequate measures calculated to prevent the multiplication of mosquitoes in general.

6. In 1898, when the author reckoned the longevity of the stegomyia at thirty-five to forty days, as a maximum, he fancied that his theory would be improved by including also the possibility that the infected insects might transmit their infection to their progeny, as the cattle-tick is supposed to do with regard to Texas fever. The reasons which induced him to make that suggestion ceased to exist from the moment that the United States commission proved that some of the stegomyias live as many as seventy or more days, and the author was not sorry to give up an idea which did not fit readily his theory.

No Decision on Yellow Fever Propagation.

MAJOR W. C. GORGAS presented the following resolution as the report of the committee on yellow fever resolutions signed by Drs. Gorgas, Ross and Glennan:

Resolved, That in view of the establishment of the fact that yellow fever is only transmitted by the mosquito, this conference is of the opinion that there is no longer necessity for the disinfection in yellow fever cases of clothing, bedding, fabrics, or effects of any kind, but simply to take measures looking to the control of the sick and the extermination of infected mosquitoes. In cases where non-immunes have been exposed to infection, they should be observed during the period of incubation.

DR. J. S. STEPHENS, Natchitoches, La., representing Dr. Arthur Nolte, of the Louisiana State Board of Health, submitted a minority report, to the effect that the mosquito was not the only mode of transmission of yellow fever, he and his confrères believing that fomites carry the disease. The experience in the past had been extensive in that regard. Believing, therefore, that both the mosquito and fomites were modes of transmission of the disease, in Louisiana the same quarantine was maintained to-day that was carried out years ago, with slight modification.

After a spirited discussion, participated in by several members of the Conference, Dr. John S. Fulton, Baltimore, moved that both the majority and minority reports be spread on the proceedings, but that the conference not commit itself to any expression concerning the practical measures to be used in restricting yellow fever. This motion was adopted.

Address of Welcome.

An address of welcome was delivered by Prof. Wm. H. Brewer, president of the State Board of Health of Connecticut, after which came the delivery of the presidential address, by Dr. H. M. Bracken, Minneapolis.

The State in Its Relation to the Tuberculous.

DR. BRACKEN considered the subject under the following heads:

1. The care of the advanced or incurable cases.
2. The care of the incipient cases.
3. The protection of the uninfected.

Humanity demands that we should care for the incurable individuals. The last United States census gives the total number of deaths during the census year from this one disease as about 110,000. Undoubtedly, a large proportion of these patients were too poor to care for themselves during the latter part of their illness. Looked at from an economical standpoint, it is wise to provide special hospitals for such cases rather than to thrust them on the general hospitals where they may infect the non-tuberculous patients. Humanity demands that the tuberculous poor should be decently housed. Discretion, as well as humanity, demands that the incurable tuberculous shall be properly cared for.

The present method in vogue in certain state institutions of drawing a line between the advanced and the incipient cases of tuberculosis, and saying to the former, "Go hence; we can not cure you; we do not want you; you can not get well; go home and die, while we care for those only who may recover," is highly deplorable. It is depressing; it is inhuman. Undoubtedly a percentage of the advanced tuberculous cases may recover. Why should this class of patients be told, indirectly at least, that they are incurable? Why should not hope be held out to them as long as there is any hope whatever?

The incipient tuberculous demand attention. It is easier to persuade legislators to give money to institutions that can show great results. Every hospital is ambitious to keep its death rate as low as possible. Appeals for institutions for the incipient tuberculous are influenced by the fact that better results can be shown for this class than for the advanced cases, and the feeling prevails that it is through results we must appeal to legislators.

If it is a public responsibility to provide for all tuberculous individuals, it is an imperative duty to protect the non-tuberculous. This can only be done by removing all tuberculous individuals from the homes or places of residence where they are a source of danger.

DR. BRACKEN presented resolutions, which were adopted, declaring the conference in favor of notification and registration of the tuberculous, and that state and municipal authorities should care for such individuals and provide proper institutions for them.

California Plague Situation Condemned.

PROF. F. C. ROBINSON, Brunswick, Maine, presented the following resolutions in behalf of the State Board of Health of Maine, expressing the opinion of the conference as to the conduct of the health authorities of San Francisco in dealing with the plague question:

WHEREAS, Thirty cases of yellow fever have occurred since July 13, 1902, no information as to their origin or exact location having been furnished, no effective steps having been taken to restrict the spread of the disease, the City Board of Health of San Francisco being helpless, and the mala fides of the State Board of Health of California having been fully established by the history, supported by documentary evidence in the possession of this conference; therefore, be it

Resolved, That the Conference of State and Provincial Boards of Health of North America views with abhorrence the irretrievable disgrace of the present State Board of Health of California, and pronounces the plague situation in California a matter of grave national concern; and be it further

Resolved, That the National Conference of State and Provincial Boards of Health of North America does hereby advise the various State Boards of Health of the United States to consider the propriety of calling on the Surgeon-General of the United States Public Health and Marine-Hospital Service to arrange at the earliest possible date a joint conference for the purpose of eradicating the plague from the United States.

The resolutions were unanimously adopted.

DR. CRESSY L. WILBUR of Lansing, Mich., read two papers, one entitled "Progress of the Movement for Uniform Statistics of Causes of Death," and the other, "How Shall Births Be Registered?"

Some Recent Evidence as to the Spread of Typhoid Fever.

DR. HENRY B. BAKER, Lansing, Mich., followed with a paper on this subject. In about 25 or 30 per cent. of the cases of typhoid fever, the urine contains vast numbers of the specific micro-organisms which cause the disease; also that this condition sometimes remains for a considerable time after apparent recovery, and that cystitis months after recovery from the fever may be due to the continued presence of typhoid bacilli in the bladder. This is one reason why typhoid fever is sometimes spread more or less directly from person to person, and

is so likely to occur in a camp to which it might be supposed that only well persons go. It emphasizes the importance of proper disposal of the urine, as well as the bowel discharges, at all times. Human urine and other excreta should be considered by sanitarians as generally liable to contain the specific cause of typhoid fever.

The habits of flies, when considered in connection with present knowledge of the presence of the bacilli of typhoid in the urine and other excreta, make plain the danger of all camps to outbreaks of typhoid fever, and should make it possible to prevent and restrict such outbreaks.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Asthma in Children.

For the treatment of asthmatic paroxysms in children, Méry, in *Ther. Monthly*, states that the most efficacious method is with inhalation of pyridin in seven or eight drop doses. The substance may be inhaled from a handkerchief or a saucer. In several cases the remedy has proved both efficacious and rapid in its action. The inhalations may be repeated four or five times a day. In case pulmonary congestion is present, the use of counter-irritants, dry cups and hot compresses about the thorax, and if necessary hot baths are recommended. The attending bronchial catarrh should be treated by the use of terpin hydrate, potassium iodid and sulphur honey. Sulphur honey is made by adding drams 5 (gm. 20) of sulphur to drams 20 (gm. 80) of honey. The dose is one or two teaspoonfuls a day.

Bruises and Contusions.

The following formulæ are valuable as local applications in the treatment of bruises:

R.	Plumbi acetatis	gr. v	30
	Tinct. opii	ʒv	20
	Aq. destil. q. s. ad	℥vi	180

M. To be applied freely to the inflamed surfaces; or:

R.	Ichthyol	ʒiv	16	
	Oil of bay	m. xx	1	30
	Tinct. capsici	m. vii		50

M. Sig.: Apply carefully on bruised spots around the eye; or:

R.	Spts. camphoræ	ʒii	8
	Tinct. arnicæ	℥ss	15
	Ext. hamemelidis flu. q. s. ad	℥iv	120

M. Sig.: Apply locally on lint.

Diet in Tuberculosis.

Robin, in an abstract in *Amer. Med.*, recommends the following diet for tuberculous patients: In the morning on awaking, a large glass of milk, to which Vichy water has been added. At 8 o'clock a small breakfast consisting of a slice of beef or a fat chop, two slightly-cooked eggs with a little grated bread, with or without butter; oatmeal, or plenty of cream, but little sugar and two glasses of milk, or a cup of coffee with milk. At nine o'clock the patient should be given cod-liver oil and a little milk. If this remedy is not well borne he should take a large glass of milk, in which the yolk of a raw egg has been stirred. At 10 o'clock he should receive a large cup of beef tea, after which he should lie down until 12. At 12:30 he may partake of a full meal, consisting of white fish, a little rice prepared with water or milk, boiled or roasted chicken, cauliflower, well-buttered bread, one or two glasses of milk, and as dessert cooked apples with cream. Cod-liver oil or milk containing the yolk of a raw egg is taken again at two o'clock. Two hours later a sandwich of grated meat is taken; then he should rest on a couch until six o'clock, when he should partake of soup, mutton or raw beef, creamed spinach, vanilla ice cream, stale bread and plenty of milk. At eight in the evening cod-liver oil or milk containing the yolk of a raw egg is again administered, and before going to bed a glass of cold or very hot milk, or a cup of bouillon. During the night, if the patient awakes, he may be given another glass of milk.

Bronchitis.

Yeo recommends the balsams of Peru, tolu, benzoin and storax in the treatment of chronic bronchial catarrh in order to modify the morbid secreting action of the respiratory mucous membrane. He has found the preparation containing three of the foregoing balsams to be of great service in lessening the secretion and quieting the cough, which can be made up as follows:

R.	Tinct. benzoini co.	ʒii	8
	Tinct. tolutani	℥ss	2
	Oxymellis scillæ	ʒiii	12
	Mucil, acaciæ	ʒiv	16
	Vini ipecacuanhæ	℥ss	2
	Aquæ q. s. ad.	℥vi	180

M. Fiat mistura. Sig.: Two tablespoonfuls three times a day.

Ammoniacum, according to the author, is of great value in the treatment of chronic bronchial catarrh in old people. The combination with scilla as in the following formula may be used:

R.	Tinct. camphoræ comp.		
	Oxymellis scillæ, āā	ʒiii	12
	Mist. ammoniaci q. s. ad	℥vi	180

M. Fiat mistura. Sig.: Two tablespoonfuls at a dose three times a day.

In those cases intermediate between the acute and chronic forms the following is recommended:

R.	Tinct. scillæ	ʒii	8
	Tinct. camph. comp.		
	Spts. etheris nitrosi, āā	ʒiii	12
	Liq. ammon. acetatis	℥iss	45
	Aq. camphoræ q. s. ad	℥vi	180

M. Fiat mistura. Sig.: Two tablespoonfuls every five or six hours.

In putrid bronchitis the following serves as an excellent tonic and expectorant:

R.	Ammonii carb.	gr. xl.	2	65
	Tinct. nucis vom.	ʒiss	6	
	Tinct. cinchonæ co.	℥i	30	
	Spts. chloroformi	ʒiiss	10	
	Infusi senegæ q. s. ad	℥viii	240	

M. Fiat mistura. Sig.: Two tablespoonfuls three times a day or oftener.

And for its still better tonic effects the following is prescribed:

R.	Tinct. ferri chloridi	ʒiss	6
	Liq. strychninæ	ʒss	2
	Spts. chloroformi	ʒiss	6
	Aquæ q. s. ad.	℥viii	240

Misce. Sig.: Two tablespoonfuls three times a day in water.

Thiocol is sometimes recommended in the treatment of chronic bronchitis, combined as follows:

R.	Thiocol	ʒii	8
	Syr. aurantii q. s. ad	℥iv	120

M. Sig.: One-half to one tablespoonful three times a day.

Thiocol is a white, odorless powder, soluble in water or syrup. It is said to be easily borne by the stomach, and is non-irritating to the respiratory passages. According to Merck, resorcin, salol, aspirin, salophen, creasote and guaiacol are synergistic in their action with thiocol, and therefore when prescribed with the latter the dose of each should be likewise modified.

Heroin in Asthma.

The following observations, according to Musser in "Nothnagel's Encyc. of Pract. Med.," have been recorded concerning the use of heroin in the treatment of asthma: Strube reports two cases in which bronchial asthma was relieved. The rate of respiration was lessened, the coughing controlled and sleep induced. Leo used heroin in a number of cases of bronchial asthma with success. North reports marked relief in asthma,

following the use of heroin. Floret has naught but praise for heroin in the treatment of bronchial asthma.

Manges, in *New York Med. Jour.*, states that heroin, and especially the hydrochlorid, is superior to any drug now being used in the treatment of bronchial asthma. The paroxysms are shortened and the interval between the attacks is lengthened. He used this preparation hypodermically in one-twelfth to one-sixth grain doses, repeated in an hour if necessary. Then heroin is administered by the mouth every four to six hours to insure sleep. Cardiac and renal asthma are benefited by the drug, but morphin, according to Musser, is of more benefit here. The consensus seems to speak for the efficacy of the drug, while recommending that, as a derivative of morphin, it should be prescribed with discrimination.

Chronic Cystitis.

According to G. Bjorkman, in *Merck's Archives*, the treatment of chronic cystitis may be accomplished in three different way: 1. By internal medication. 2. Local medication, either by irrigation of the organ or by direct application to the affected parts of the organ by the aid of the cystoscope. 3. Radical surgical treatment. According to the author internal medication is indicated only in light cases, and as an after-treatment. If satisfactory results are not obtained in the beginning, no time should be wasted, but local medication should be resorted to. Irrigations are advised either by washing out the bladder with a soft catheter attached to a glass funnel or with a continuous irrigation. A 5 per cent. solution of ichthyol produces good results, using the liquid at a temperature of 105 to 110 F. In tubercular conditions a few cubic centimeters of a corrosive sublimate solution (1-4000) may be introduced into the bladder and allowed to remain for fifteen minutes. The following combinations may be employed in carrying out the different forms of treatment:

INTERNAL TREATMENT.

℞. Formini (urotropin) .....gr. viiss |50
M. Ft. chart. No. i. Sig.: One such powder to be taken in a glass of water before each meal; or:

℞. Acidi benzoici .....3ss 2|
Pulv. glycyrrhizæ rad.
Ext. glycyrrhizæ, āā .....gr. xv 1|
M. Ft. pilulæ No. xxx. Sig.: Two pills every two hours.

FOR IRRIGATIONS.

℞. Acidi borici .....3iiss 10|
M. Ft. chart. No. vi. Sig.: Dissolve one in a pint of sterilized water and use for irrigation once a day.

℞. Argenti nitratis .....gr. iii to viii |20-50
Aq. destil. .....O i 480|
M. Sig.: Use for an irrigation once every three days. In the interim a solution of boric acid (6-300) should be used twice a day; or:

℞. Potassii permanganatis .....gr. iv |25
Aq. destil. .....O. ii 960|
M. Sig.: To be used lukewarm for vesical irrigation once or twice a day; or:

℞. Ichthyol .....3iiss 10|
Aquæ (steril.) .....Oii 960|
M. Sig.: To be used once a day as an irrigation.

Gastric Lavage in Infants.

According to M. Babonniex in *Med. News*, lavage is a method of treatment of peculiar value in some of the gastric disorders of the very young, and one which is associated with very little danger if properly employed. The apparatus used in infants may consist of a No. 8 to 30 urethral catheter, which is substituted for the ordinary stomach tube used in adults. Solutions of various kinds have been suggested for lavage, such as sodium benzoate, thymol, weak peroxid, etc., but the author gives preference to the normal salt solution. The temperature of this solution should be generally made luke warm, but if there be a tendency to collapse, it should be raised to the body temperature, or if there be fever it may be lowered. The chief dangers of the procedure which may arise are: Introduction of the tube into the trachea, gastric hemorrhage, tetany, and finally an increase of the previously existing collapse. Lavage is indicated in cases of acute febrile gastro-enteritis in which the symptoms of gastritis are prominent, in cases of dilatation of the stomach, and in many cases of infantile cholera. In these conditions it holds a place of great importance.

Medicolegal.

Old Age Not Complete Defense to Charge of Rape.—Neither old age nor devotion to country in time of peril, the Supreme Court of Nebraska holds, in Richards vs. State, can be regarded as a complete disproof and refutation of the charge of rape.

Constitutional Disease and Expectancy of Life.—The Supreme Court of Nebraska holds, in Central City vs. Engle, that where it is shown that a person is affected by a serious constitutional disease or a tendency thereto, it is error to submit to the jury the question of his expectancy of life, in the absence of any evidence bearing on that question. This was a personal injury case against the city, and it was in evidence that the party suing had, previous to the happening of the injury complained of, suffered the loss of one of her arms, in consequence of the disease known as periostitis. The commissioners, with whom the court agrees in the matter, held that it was error to submit to the jury any question touching the party's expectancy of life in the absence of any evidence bearing on the inquiry. They said that if it should be conceded—which they did not determine—that a jury might speculate on the probable duration of the life of a healthy person, in the absence of any evidence with respect thereto, it appeared to them that it was incompetent to decide that question in the case of a person suffering from a constitutional tubercular disease which, in the absence of testimony, might be fairly presumed to have a tendency to abbreviate her physical existence. Moreover, they said that they were strongly of the opinion that, in these days when tables of expectancy and expert testimony concerning that subject are readily procurable, it is error in any case to submit that question to a jury without the production of some of them.

Criminal Liability of Physician.—The Supreme Court of California says, in People vs. Huntington, that the accused was a physician, whose patient—a pregnant woman—expired under his hands while he was engaged in performing an operation on her womb with a curette. The evidence did not make it clear she died from the effects of shock or of the anesthetic which was being administered by another physician. The claim of the prosecution was that the accused knew the woman was pregnant, and that he was purposely attempting to produce a criminal abortion. His defense was that he was unaware of his patient's condition; that she had concealed the fact of her pregnancy, and he had diagnosed her complaint as a case of endometritis, for the cure of which the operation of curetting was not only proper, but necessary. There was evidence tending to support each of these claims, and there was also expert testimony to the effect that by a proper examination—such an examination as should always be made before operating on the interior of the womb—the accused must have discovered the condition of his patient, and would then have known that the operation he claimed to have attempted was not only dangerous, but uncalled for. There was also evidence of the same character to the effect that the patient had not received the necessary preliminary treatment, and that in other respects suitable preparations had not been made to give reasonable assurance of safety in the comparatively simple operation for endometritis. The crime charged was murder. The accused was found guilty of manslaughter, and sentenced to ten years' imprisonment in the state prison. The Supreme Court affirms the judgment of the lower court. It says that the judgment of manslaughter found by the jury acquitted the accused of any deliberate purpose to produce the criminal abortion, and was evidently based on the view that he involuntarily caused the death of his patient by want of due caution and circumspection in attempting an operation which he believed to be necessary, or at least advisable. It also says that it would have been proper to instruct the jury that the highest degree of skill is not required of a physician, and that he is not criminally responsible, except in a case of gross negligence.

Practice of Medicine—Osteopathy—Use of Title.—Chapter 117 of the Laws of North Carolina of 1885 amended Section 3132 of the Code with regard to practicing without license by adding thereto: "And any person who shall begin the practice of medicine or surgery in this state for a fee or reward, after the passage of this act, without first having obtained license from said board of examiners, shall not only not be entitled to sue for or recover before any court any medical bill for services rendered in the practice of medicine or surgery, or any of the branches thereof, but shall also be guilty of a misdemeanor," etc. In the case of State vs. McKnight the question was the simple one, the Supreme Court of North Carolina says, whether one who practices "osteopathy" is indictable if he has not procured the license required for any one by the above section before beginning "the practice of medicine or surgery." A special verdict of the jury found that the defendant's "treatment of his patient did not consist in the administration of drugs or medicines, but in the manipulation, kneading, flexing and rubbing of the body of his patients and in the application of hot and cold baths, and in prescribing rules for diet and exercise; . . . that the defendant was engaged in the general practice of that science; that he also prescribed hypnotism and suggestion under hypnotism." It also found that "upon two occasions he used a small surgeon's knife in opening an abscess in the mouth of one Shedd, but charged no fee for his services." The Supreme Court says that all it can declare on the facts found in the special verdict is that the defendant's practice was not the practice of medicine or surgery, and no license from the medical board of examiners was required. It says that the only surgery was without fee or reward, an act of charity and that was incidental and not in the usual course of the practice of osteopathy. It can not be said that one practices "medicine and surgery" when he uses neither drugs, medicines or surgery. Section 3124 requires the "board of medical examiners" to examine all applicants, "to practice medicine or surgery in anatomy, physiology, surgery, pathology, medical hygiene, chemistry, pharmacy, materia medica, therapeutics, obstetrics and the practice of medicine." It can not be conceived that the legislature would require the above examination for a profession which eschews the use of drugs and surgery. As to the argument that the science, if it be a science, of osteopathy is an imposition, the court, legally speaking, knows nothing. It only knows that the practice of osteopathy "is not" the practice of medicine or surgery as is commonly understood, and therefore it is not necessary to have a license from the board of medical examiners before practicing it. If it is a fraud and imposition, and injury results, the osteopath is liable both socially and criminally. Doubtless there is an appeal to the imagination, but that is a necessary ingredient in all systems of healing. The aim of medical science, now probably the most progressive of all the professions, is simply to "assist nature." Osteopathy proposes to do that by other methods than by the use of medicines, or the surgeon's knife. Moreover, the court says that it attaches no weight to the argument that the defendant hung out his sign and advertised himself as "doctor." The special verdict found that he had a diploma from a college of osteopathy bestowing that title upon him. There are many kinds of doctors besides medicine—as doctors of law, doctors of divinity, doctors of physics and veterinary doctors and others still. Besides in this country, so far at least as titles go, "honors are easy." If the General Assembly shall deem osteopathy a legitimate calling it may see fit, possibly, to protect educated and skilled practitioners by requiring an examination and license by learned osteopaths of applicants for license, but certainly the examination would be on subjects appropriate to secure competency therein, and not on an entirely different course such as that prescribed for applicants to practice medicine and surgery. Dentistry is not the "practice of medicine or surgery," but it is a related profession, as is also pharmacy, and each has its prescribed course of examinations of applicants for license. Whether the same rights and dignity shall be bestowed on osteopathy is a matter for the general assembly, or if it is found to be a fraud, its exercise may be made indictable. It seems that it more nearly approximates nursing in many respects (though differing in others) when taught as a profession.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical News (N. Y.), November 1.

1 *Shortening of the Radius in Colles' Fracture. George R. Fowler.
2 *Report of Ninety Cases of Typhoid Fever in Infants and Children. Isaac A. Abt.
3 Parasitic Amebæ. Frederick G. Canney.
4 *Vertigo in Neurological Diagnosis. Pearce Bailey.
5 *Ocular Vertigo. Wilbur B. Marple.
6 To What Extent, if at All, Should Physicians Dispense? H. C. Masland.

American Medicine (Philadelphia), November 1.

7 *Ligation and Clamping the Ureter as Complications of Surgical Operations. John A. Sampson.
8 *Arthropathy of the Vertebral Column in Tabes. William G. Spiller.
9 *Subcutaneous Tendon-Splicing: A Modification of Anderson's Open Method, Adapted Especially to the Tendo-Achillis. J. T. Rugh.
10 A Preliminary Note on Pompholix as It Occurs in New Orleans. Isadore Dyer.
11 The Causes, Prevention and Cure of Puerperal Eclampsia. Robert Reyburn.
12 Sarcoma of the Nares and Ethmoid Cells. Joseph S. Gibb.
13 Surgical Work of Professor von Mosetig-Moorhof in the Vienna Allgemeine Krankenhaus. Nicholas Senn.

Boston Medical and Surgical Journal, October 30.

14 *The Teaching of Surgery. (Concluded.) Herbert L. Burrell.
15 *A Report of the Blood Examination in Ten Cases of Severe Burns of the Skin. Edwin A. Locke.
16 *Septicemia and the Curette. H. Plympton.
17 A Case of Ununited Fracture of the Radius Due to Osteomyelitis. Charles F. Painter.

Medical Record (N .Y.), November 1.

18 *The Use of Concentrated Actinic Sunlight in the Treatment of Tuberculosis. J. W. Kime.
19 *Some Experiments with Paraffin. A. E. Comstock.
20 *The Use of the Clinical Thermometer as an Aid in Quarantine Inspection. A. H. Doty.
21 *X-Rays in the Treatment of Cancer and Other Malignant Diseases. Emil H. Grubbé.
22 *Hydremia and Malaria. R. Cadwallader.

Philadelphia Medical Journal, November 1.

23 Report of a Case of Penetrating Wound of the Heart—Unsuccessful Attempt at Suturing. John H. Gibbon.
24 *A Contribution to the Study of Nephritis in Smallpox Based upon Analyses of Urine in 128 Cases. William H. Welch and Jay F. Schamberg.
25 The Autobiography of a Victim of Chronic Catarrhal Appendicitis. Frederick A. Rupp.
26 Report of a Case of Septicemia, as I Felt It Myself. J. C. Newman.
27 Conclusions as Regards the Exsanguinated Uterine Zones. Byron Robinson.
28 Hospital Charities in Philadelphia. Daniel Baugh.

New York Medical Journal, November 1.

29 A Case of Necrosis of the Mucosa of the Large and Small Intestine, with Hemorrhage into the Tissues, Produced by Streptococci (Enterococci). H. F. Harris.
30 Rotary Curvature of the Spine; a Reply to Dr. Lovett. A. B. Judson.
31 *The Modern Basis of Dietetic Treatment in the Uric Acid Diathesis. Alfred C. Croftan.
32 *The Medical Treatment and Management of Acute and Chronic Cholelithiasis. Leonard Weber.
33 *The Effect of Climate on Laryngeal Tuberculosis, with Special Reference to High Altitudes. Robert Levy.
34 The Burke Foundation and a Plea for Proper Homes for the Convalescent Poor of Large Cities. S. A. Knopf.
35 The Dependence of Skin Affections upon Nutritive Disturbances. W. R. Inge Dalton.
36 On the Immediate Repair of Cervix Lacerations. Anna F. Donoghue.

Cincinnati Lancet-Clinic, November 1.

37 The Vaccination Problem. Benj. F. Lyle.
38 Surgery of Prostate, Pancreas and Diaphragm. (Continued.) B. Merrill Ricketts.
39 The Treatment of Puerperal Eclampsia. John Rivers.

Virginia Medical Semi-Monthly (Richmond), October 24.

40 Some Benefits of Thorough Organization of the Medical Profession, Both to the Laity and Profession; with Mention of Some of the Most Prevalent Causes of Sickness, Race Decay, and Their Prevention. (Concluded.) R. S. Martin.
41 Report of a Case of Secondary Hemorrhage Following Tonsillotomy; Measles. Clarence P. Jones.
42 A Case of Poisoning from Pennyroyal. G. W. Holland.
43 The Webster-Baldy Operation for Retrodisplacement of the Uterus. Charles R. Robins.
44 The Advantages of Bladder Drainage as Illustrated by Some Recent Cases. Lewis C. Bosher.
45 The Diagnosis of Chronic Interstitial Nephritis. Barnard E. Baker.

American Practitioner and News (Louisville), September 15.

46 X-Rays in Surgery. Arthur T. McCormack.
47 Therapeutics of X-Rays. James B. Kinnaird.
48 Serum Therapy in Laryngeal Diphtheria. Adolph O. Pfingst.
49 Stomach Diseases in Children. H. H. Roberts.
50 The Rational Treatment of Locomotor Ataxia. Curran Pope.

American Journal of Obstetrics (N. Y.), October.

51 Report of Two Cases of Gastrectomy. Albert Vander Veer.
52 *Normal Involution of the Appendix as a Matter of Surgical Interest. Robert T. Morris.
53 *Normal Saline Solutions Before, During and After Abdominal Operations. William H. Humiston.
54 *The Management of Cases of Emergency Arising from Rupture in Ectopic Pregnancy. Augustus P. Clarke.
55 So-called Neurasthenia and Hysteria in Their Relations to Abdominal Section. J. Stewart Nairne.
56 *An Operation for Stricture of the Rectum in Women. Thomas J. Watkins.
57 *Plastic Surgery of the Female Urethra. Henry P. Newman.
58 Some Recent Surgery for Biliary Obstruction. I. S. Stone.
59 Secondary Puerperal Hemorrhage. L. W. Atlee.
60 *The Time of the Occurrence of Ovulation as Deduced from Some Clinical Observations. Jennie G. Drennan.
61 Hydrorrhea Gravidarum. W. Sinclair Bowen.
62 The Degeneration of Gynecology. W. P. Carr.

Pennsylvania Medical Journal (Pittsburg), October.

63 *Address of the President—Antagonisms to Scientific Medicine. Francis P. Ball.
64 Address of Welcome, Pennsylvania State Medical Society. Edward Harvey.
65 Ability of the Eye to Withstand Injury and Disease. P. J. Kress.
66 *Severe Burn of the Eye and Face by Nitrite of Amyl, with Loss of the Eye. Edward A. Shumway.

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67 Chronic Colitis, Membranous Colitis and Neuroses of the Colon. C. A. Ewald.
68 Powdered Cuttle Fish in the Treatment of Intestinal Catarrhs. A New Apparatus for Irrigating the Colon. George Herschell.
69 *Chronic Enteritis in Relation to Disturbances of the Splanchnic Circulation. Fenton B. Turck.
70 Inflammations of the Appendix, with Reference to Their Dependence upon Conditions of the Colon and the Indications for Operation. A. L. Benedict.
71 The Electric Treatment of Chronic Diseases of the Intestines, Especially Catarrhal, with Atony and Constipation. Margaret A. Cleaves.
72 Chronic Enteritis and Enteroptosis, with Special Reference to Treatment. J. A. Lichty.
73 Carbonic Acid Gas in the Treatment of Dysentery and Membranous Enteritis. A. Rose.
74 Diarrhea in Its Relations to Chronic Catarrh of the Intestines, Including Catarrhal Appendicitis; Treatment. Boardman Reed.

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75 The Religion of Science. Victor C. Vaughan.
76 The Medical Profession and Social Reform. Edward T. Devine.

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77 Treatment of Prolapse of the Rectum. Joseph M. Mathews.
78 *Septicemia and the Curette. H. Plympton.
79 Treatment of Pulmonary Tuberculosis. Henry M. Pitman.
80 Medical Organization. Ben P. Earle.
81 Climatic Treatment of Consumption. S. G. Cain.

Canadian Journal of Medicine and Surgery (Toronto), November.

82 Virchow. J. J. MacKenzie.
83 Pleurisy with Effusion. D. Gilbert Gordon.
84 Pleurisy as Associated with Tuberculosis. John Hunter.
85 Report of a Case of Claw-Hand Resulting from Compound Fracture of Forearm; Cured by Operation. H. P. H. Galloway.
86 The Methods of Using Argyrol. A. C. Barnes.

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87 *Otitis Media in Infancy and Childhood. W. M. Carhart.
88 Remarks on Gas-Ether Anesthesia. James T. Gwathmey.

Journal of Medicine and Science (Portland, Me.), October.

89 The Requirements of a Surgeon. W. P. Giddings.

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90 Some Cases of Appendicitis and the Lessons They Teach. Miles F. Porter.
91 *The Roentgen Rays in the Treatment of Inoperable Cancer. N. L. Deming.

Albany Medical Annals, November.

92 Introductory Address, Albany Medical College. Joseph D. Craig.
93 The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery. (Concluded.) H. Judson Lipes.

Southern California Practitioner (Los Angeles), October.

94 Some Ideals of the Medical Teacher. James H. McBride.
95 Some Obstetrical Experiences. Anstruther Davidson.
96 *A Study of Diagnosis of Incipient Pulmonary Tuberculosis. F. M. Pottinger.

Kansas City Medical Record, October.

97 Examination of Sputum in Pulmonary Tuberculosis, with a Record of Twenty-five Cases. H. Z. Gill.
98 Perineorrhaphy. H. C. Crowell.
99 Some Recent Remedies and Applications in Throat and Nose Practice. Hal Foster.

Western Medical Review (Lincoln, Neb.), October 15.

100 Leucorrhea. W. O. Henry.
101 Our Duty to the Public in Acute Infectious Diseases. A. D. Nesbit.
102 *Apocynum Cannabinum in Some Dropsical Conditions. M. L. Hildreth.
103 The Middle Turbinate. Henry B. Lemere.
104 Tendon Surgery. A. I. McKinnon.
105 The Question of the Disposal of House Drainage. W. S. Pratt.
106 House Disinfection After Smallpox. Ira W. Porter.
107 Acomegaly, with Case and Autopsy. W. F. Milroy.
108 Rubbish in Medical Literature. J. Lue Sutherland.

Medical Times and Register (Philadelphia), October.

109 Formalin in Skin Diseases. Heinrich Loeb.
110 *How to Assist Young Girls to Womanhood. Edward C. Hill.

Hot Springs Medical Journal, October.

111 The Effects of Prolonged Lactation upon the Eye. H. Moulton.

Alabama Medical Journal (Birmingham), October.

112 To What Extent Should Physicians Supervise the Education of Our Boys and Girls, with Special Reference to College Women. (Concluded.) D. L. Wilkinson.
113 *Diagnostic and Therapeutic Measures Overlooked by the General Practitioner in Diseases of the Stomach. W. P. Harbin.
114 The Duty of the Profession and the Need of State Sociological Societies in the Development and Education of the Race. R. R. Kime.
115 The Methods of Using Argyrol. A. C. Barnes.
116 The Medical Profession and Its Duties to the Public. W. E. B. Davis.

Southern Practitioner (Nashville, Tenn.), November.

117 Placenta Previa. George C. Trawick.
118 *How to Assist Young Girls to Womanhood. Edward C. Hill.
119 *Septicemia and the Curette. H. Plympton.

Atlanta Journal-Record of Medicine, October.

120 Education as a Sociologic Factor. George H. Price.
121 *The Criminal Himself. S. G. C. Pinckney.
122 The State's Duty to the Orphan. Edgar J. Spratling.
123 *Some Practical Problems in Sociology Shown by a Study of the Southern Negro. M. L. Perry.

New Orleans Medical and Surgical Journal, November.

124 The Reciprocity of Medical Examining Boards. E. L. McGehee.
125 Postpartum Hemorrhages. R. A. Gray.
126 Care of Children's Teeth. A. G. Friedrichs.
127 The Surgery of the Child. John F. Oechsner.
128 Suspension of the Uterus on the Round Ligaments. C. Jeff Miller.
129 Chronic Traumatic Ulcer of Leg, of 25 Years' Standing; Skin Grafting (Thiersch); Medullary Narcosis. Burdett A. Terrett.

Georgia Journal of Medicine and Surgery (Savannah), June.

130 On the Treatment of Disease by the Actinic Ray. William S. Gottheil.
131 *Some Medical Aspects of Senile Prostatic Hypertrophy. W. H. Prioleau.
132 *Is Tuberculosis a Disease of Environment Only? H. McHaton.
133 Polyhydramnios, Its Differential Diagnosis and Treatment, with the Report of Cases. Edward P. Davis.
134 The Treatment of Placenta Previa. Joseph E. Allen.
135 Contributions to Practical Therapeutics. Albert C. Barnes and Hermann Hille.

Columbus Medical Journal, October.

136 Lectures on Peritonitis. Starling Loving.
137 Colles' Fracture. Will J. Means.

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1. **Colles' Fracture.**—Fowler describes the various forms and conditions of Colles' fracture, which has no classical type, but varies from a slight separation of a spicula of bone to extensive fracture with large displacement or impacted fracture. He remarks that it is not correct to say that there is no deformity with impacted fracture. There is a relative downward displacement and a more or less pronounced radial flexion (abduction of the hand or forearm). Pain is often a prominent symptom. He remarks that in treatment, if sufficient force can be brought to bear to overcome the deformity at once, and if pains be taken to maintain the normal position of the ulnar nerve by a sufficiently hard and properly applied pad placed on the palmar side of the head of the ulnar, and if, in addition, early massage and movements of the fingers, both active and passive, be employed, the very best results can be obtained in the great majority of cases. He uses a tightly rolled portion of an ordinary muslin roller bandage about the diameter and length of the little finger, prevented from slipping by covering with pieces of adhesive plaster folded in such a way that before applied it presents an adhesive surface to the skin as well as to the roll. An anesthetic should always be employed and the normal length of the radius restored if possible. The ulna is then forced into place and the roll placed on the palmar surface to retain the reduction, and held there by several turns of adhesive plaster, the breadth of which corresponds to the length of the roll. The edges of the adhesive plaster are nicked to prevent these from sinking into the skin should swelling occur subsequently. The arm is placed in a sling with the

hand dependent, so as to maintain the latter in a position of ulnar abduction. In spite of every effort, however, it will be found impossible to effect a complete reduction in certain cases, but they are rare. Where the deformity resulting from failure to reduce the displaced ulna is of sufficient importance, either from impairment of function or the presence of pain or otherwise, he has practiced the removal of the head of the ulna through an incision made along its border. The operation is performed subperiosteally, the section of bone being made by the Gigli wire saw. Where the alignment of the radius is but slightly disturbed, the displacement of the lower fragment being entirely in the upward direction, and at the expense of its cancellous tissue into which the upper fragment is crushed, this operation will be found to fulfill all the indications of improvement of function, relief of pain and correction of deformity. Where the impaction is slight and shortening, due to an angular deformity or a bowing of the radius, it will not be so useful. Here nothing short of refracture with perhaps cuneiform osteotomy will completely serve the purpose. There are two symptoms, however, which excision of the head of the ulna will relieve. They are interference with palmar flexion of the wrist and the presence of pain.

2. See abstract in THE JOURNAL of October 18, p. 1000.

4. **Vertigo.**—The neurologic interest of vertigo is associated with disease of the brain and neuroses. Bailey mentions drug vertigo, and particularly in this connection that due to iodid of potash. He thinks it also occurs in the specific iodid treatment of suspected syphilis. In neurasthenia vertigo is principally subjective. The patients can walk a chalk line unfalteringly, and there is no increase in the normal swaying when they stand with the feet close together and the eyes closed. It is a symptom of fatigue and is intensified by idea. Some neurasthenics have real objective vertigo, and this should invite closer investigation as to whether due to degenerative changes of the blood vessels of the brain. In hysteria, vertigo is less frequently complained of, but there are a number of symptoms that might be mistaken for objective vertigo. In neither hysteria or neurasthenia is it possible to establish the nature of the vertigo by one symptom. In neurasthenia the diagnosis is by exclusion. Other causes must be eliminated before it can be set down as purely neurasthenic and functional. In organic diseases of the brain vertigo is due to interference with the centers of equilibrium in the medulla and cerebellum, and the author gives the connection of these with the ganglion of Scarpa in the internal ear and its connection with the semicircular canals, explaining thus the phenomena. The medulla, pons, cerebellum and possibly the cerebrum are the nervous structures in which foci exist that may give rise to subjective and objective vertigo. In the pons and medulla such invasion is usually tumor, while in the cerebellum abscess is more frequent. Injuries may also cause loss of equilibrium in the cerebellum, but they are rare. When they occur in the medulla and pons they are usually rapidly fatal. It is in the cerebellum that vertigo as a focal symptom of nervous disease is of great importance. Cerebellar vertigo is essentially static and locomotor; in the prone position the patient is usually free from it and it is not made worse by closure of the eyes. Theoretically the staggering is toward the side of the lesion, but practically this is not always the case. The great difficulty in the diagnosis is due to pressure symptoms at a distance. He points out the difficulties in the localization of the lesion in the cerebellum, though the existence of cerebellar disease is not so difficult of diagnosis. Unless unilateral nerve deafness is present it is impossible to be certain as to which side is affected. It is also suggested as a possibility that the main centers of equilibrium may have their representations in the cortex. Two chronic brain diseases are especially notable for vertiginous symptoms: they are epilepsy and general paresis. Vertigo is a very frequent symptom, especially in the petit mal attacks. Cerebral endarteritis is one of the most fertile causes of vertigo due to brain disease, and is especially prominent in the aged. It is often the chief clinical symptom of general arteriosclerosis.

5. **Ocular Vertigo.**—Marple discusses the causes and symptoms of ocular vertigo, remarking that it is most frequently due to paralysis or paresis of some nerve supplying the ocular muscles and causing diplopia. The less conspicuous the ocular anomaly the more apt is the patient to suffer from vertigo. Failure of the vertigo to disappear when one eye is closed does not necessarily exclude the possibility of some muscular anomaly of the eye. If closing one eye, the right for example, does not cause the disappearance of the vertigo, then have the patient close the other eye, that is, the left alone. If we have to do with paralysis or paresis of the ocular muscles the vertigo will disappear at once. As to what muscle is affected it is often very difficult to decide, but this is only of interest to the ophthalmologist. The causes of ocular paresis are chiefly syphilis, diphtheria and diseases of the brain and cord, and the treatment should be that of the underlying cause. If we have excluded any paralytic muscular anomaly, the chances of finding any ocular cause for the vertigo are much lessened. If there is any ocular paralysis he thinks it improbable that the eyes are the cause of the vertigo. There should be a rigid examination made for refraction, under a mydriatic, if possible, and for the correction of any error that may exist. He remarks in conclusion that while he has met with a few cases of vertigo associated with ocular palsy, the number in which a muscular or refractive anomaly of the eye was the cause, has been very small.

7. **Ligation and Clamping the Ureter.**—The experience at the Johns Hopkins Hospital, including 16 cases, is reported and analyzed by Sampson. He concludes that occlusion of the ureter by a ligature or clamp is of quite frequent occurrence during gynecologic operations. Only a portion of these injuries are recognized either during operation or afterwards. A ligature about a ureter, if removed before the close of the operation, will probably do no injury. The clamp is more liable to give rise to post-operative results, but neither, if removed before the close of an operation, do as much harm as an operation that interferes with the blood supply of the ureter sufficiently to give rise to a urinary fistula, due to sloughing of the ureter at that place. Complete and permanent occlusion of the ureter in the absence of infection leads to renal atrophy, with more or less dilatation of the ureter and pelvis, usually without symptoms or evidence of constitutional disturbance, and probably without much shock. Ligation of the ureter is probably less likely to cause either a marked hydronephrosis or a pyonephrosis than a uretero-ureteral anastomosis. Ligation of the ureter may be considered a justifiable procedure when necessary in cases in which uretero-ureteral or ureterovesical anastomosis is impossible. Such operations, however, have been successful under great tension in which 2 to 9 cm. of the ureter had been removed. In ligation of the ureter care should be taken to doubly ligate it with non-absorbable material, and if possible to place the ligated end in a skin incision. Only a portion of the cases of ligation or clamping of the ureter can be recognized after operation as: 1. In cases in which both ureters have been occluded, anuria will probably be the only evidence of the trouble for the first twenty-four or forty-eight hours. 2. In cases where urinary fistula develops from injury. 3. Cases where definite symptoms arise, such as pain along the ureter and in the kidney region, possibly associated with chills and fever and other constitutional disturbances. These are exceptions rather than the rule and probably indicate a stenosis rather than an occlusion. 4. A mass may develop in the renal region due to formation of a hydronephrotic kidney, and this mass may form without symptoms. 5. The injury may be discovered at autopsy. Ligation of the ureter may terminate fatally when renal insufficiency exists or in cases of profound shock. A person in such a condition with only one working kidney has less chance than one with two. The ligature may slip, be absorbed, or in some way lead to leakage of urine, which, if the abdomen be closed and there be no avenue of escape, may cause death, especially if infection be present. Catheterization of the ureter preliminary to hysterectomy for carcinoma of the cervix is valuable in abdominal and combined abdominal and vaginal hysterectomies, but the catheter should be removed before closing the abdominal

cavity. The ureter can be palpated at any time, and therefore there is less danger of injuring it and the operation is expedited. Post-operative uretero-vaginal fistula from interference of the blood supply of the ureter is less likely to follow when the ureter is catheterized, for the exposure of that portion of the ureter above the broad ligament is unnecessary, as it can readily be palpated. If the ureter is adherent to the growth, the dissecting free of it would probably mean a return of the carcinoma, and also possibly a ureteral fistula due to interference with its blood supply. Hence it is better to make a wider dissection, excising the lower end of the ureter with the growth and implant the free end into the bladder, thus giving less chance for the return of the disease and also for ureteral fistula. The catheter itself protects the ureter in various ways, rendering its displacement a little more difficult. It is less likely to be kinked by ligation in the surrounding tissue. It also has other advantages; it prevents ligation doing harm by occlusion, and offers resistance to a knife or scissors, preventing the ureter being cut across, and helps in finding injuries to the ureter and also serves as a guide with which to repair the injury. Clamping the catheterized ureter may crush the catheter so that a portion of it will be left in the ureter in withdrawing the catheter; but this can readily be removed through a small slit and the slit repaired, hence the importance of withdrawing before closing the abdominal incision. If the catheterized ureter be clamped in a vaginal hysterectomy for carcinoma of the cervix, a portion may be broken off and left, which would probably necessitate an abdominal or retroperitoneal operation for its removal. While a catheterized ureter is easy to palpate in the vagina and hence its exact location may at any time be determined, the operator must always bear the foregoing in mind and determine its position before clamping. The author asks, is not vaginal hysterectomy for carcinoma of the cervix contraindicated when, according to Wertheim, in 90 cases of abdominal hysterectomy for carcinoma of the cervix, metastases of the carcinoma to the pelvic lymph glands were found in 30 of the cases, and there was no relation between the local extent of the disease and the presence or number of lymph glands involved?

8. **Vertebral Arthropathy in Tabes.**—Spiller reports a case of marked spinal deformity in tabes, a condition which had been noticed by Charcot and Marie and by Koenig, who considered the deformity due to fracture. He thinks possibly other cases may be found in the literature, but he reports it on account of its rarity.

9. **Subcutaneous Tendon Splicing.**—Rugh discusses the advantages and disadvantages of the open and the subcutaneous methods of operation on the tendons and offers a modified operation based on that of Anderson, who split a tendon longitudinally and slid one portion over the other and sutured in the position of correction. After having done this several times Rugh devised the following improvement, by which it can be done through a very small skin incision and without lifting the tendon from its bed. He uses a very small knife with a long shank and a blade about one and one-half inches in length, turned at right angle to the shank and having the cutting edge anteriorly so that, as the knife is pushed forward, the tendon is slit. After a thorough preparation of the skin the operation is done as follows: "The tendon is put on the stretch, and an incision one-half to three-quarters of an inch in length is made directly over it at about its middle point. After the tendon has been exposed, the blade of the knife mentioned is passed through its center, and being held on the same plane as the tendon, is pushed to the one extremity of the tendon, or for a distance of two or three inches, the tendon being outlined by the thumb and finger held on either side of it. The knife is then withdrawn in the same line, turned and pushed in the opposite direction for the same distance, thus splitting the tendon for four to six inches. The points at the upper and lower ends of the tendon to which the knife reached are marked on the skin with a sharp-pointed tenotome, and after withdrawal of the splitting knife the tenotome is introduced on the right side of the tendon at one end, and the right half of the tendon is severed by carefully cutting little by little from above downward until the dividing slit is reached. When this half is severed it is seen to relax immediately, the tendon being held tense the while. Then the left half is cut in the same way at the opposite end and side, and as corrective pressure is made, the two halves slide past one another in the wound. When completely corrected, the two ends are sewed together through the small skin incision and the incision closed by one or two sutures. A plaster-of-paris or other fixed dressing is applied to maintain the correction secured, and this or another one worn for about four weeks, by which time firm union will have occurred." It will be readily seen, Rugh says, the most important objections to the Anderson method are overcome by this one, viz., the long skin incision, the danger of sepsis and that of sloughing from interference with the blood-supply. Like everything else, however, it has its disadvantages, but these have been found to be easily overcome. The first one is, the operation can not be easily performed in those cases in which the tendon has a partial twist, as the fibers do not run straight, and the splitting knife may run out at one side or the other. This condition, however, may be recognized so soon as the tendon is exposed, and if present the incision can then be extended and an Anderson operation done, without, however, lifting the tendon or separating it from its bed. If this is omitted, the circulation will be less disturbed, and consequently there will be less danger of sloughing. The second disadvantage is, there may be some uncertainty as to when the half of the tendon is severed, as a few fibers still remaining above or below may prevent relaxation of that half; but if the handle of a bistoury or other flat instrument be introduced into the slit, every fiber on the one side of this may be cut without danger to the integrity of the other half. He has done this operation in twelve cases with only satisfactory results, with no sepsis, a very small skin scar, definite lengthening, etc.

14.—See abstract in THE JOURNAL of July 12, p. 101.

15. **Blood Condition in Burns.**—After a rather full historical résumé, Locke gives an account of ten cases of severe burns observed in the Massachusetts General Hospital. His conclusions are: "1. The blood flows sluggishly, and is of a peculiar dark, purple appearance. 2. An immediate increase in the number of erythrocytes, in severe but not fatal cases, of from 1,000,000 to 2,000,000 per c. mm., takes place within a few hours; in fatal cases, of from 2,000,000 to 4,000,000 per c. mm. 3. A rapidly increasing leucocytosis constantly occurs: in cases ending in recovery often of 30,000 or 40,000 per c. mm.; in fatal cases usually above 50,000 per c. mm. 4. Morphological changes in the erythrocytes are slight. 5. The percentage of neutrophiles is somewhat above the normal, but not so much as in the ordinary inflammatory leucocytosis. 6. A considerable destruction of the leucocytes takes place, especially in the very severe burns. 7. Myelocytes may be present in small numbers in severe cases. 8. There is, as a rule, marked increase in the number of blood plates."

16.—This article has appeared elsewhere. See THE JOURNAL of October 25, ¶36, p. 1072.

18. **Tuberculosis.**—Kime describes his method of treating tuberculosis by means of large reflectors throwing blue light, rich in actinic rays, over the chest, and reports 29 cases. He thinks the treatment with direct reflected light is much better than that from other sources. The human body is translucent to actinic light, and the irritant action of the light on the living body cells is a direct stimulus to them. A high percentage is absorbed by the tissues and produces definite chemical changes and also inhibits and destroys bacterial life.

19. **Paraffin Prothesis.**—From experiments with paraffin injections in rabbits Comstock concludes that it forms a sort of bridge-work in the tissues, and is not an encapsulated foreign body. He illustrates his paper with microscopic sections showing the results or differences produced after these injections and confirming his view.

20. **Temperature.**—Doty has examined a large number of emigrants at the New York Quarantine Inspection and finds that the average temperature is about as usually estimated, 96.5, but lower temperatures are very frequent, down to as low

as 96 or 97, especially early in the morning. A temperature above 99.5 he would consider pathologic. A higher temperature than normal may be due to nervousness, and often occurs this way in healthy individuals.

21. **X-Rays in Cancer.**—Grubbé reports cases and concludes that in properly selected cases the *x*-ray capable of producing remarkable results. The relief of pain is one of the most prominent features of the treatment. Restrictive changes are noticed in all primary cancer of tuberculous growth and the rays have a decided effect on internal cancer. The greatest result is obtained in treating post-operative cases to prevent recurrences. The proportion of clinical cures by this method is greater than that obtained by any other treatment. He maintains that there is an idiosyncrasy to the *x*-rays and the peculiarities of each case must be studied. Dermatitis within certain limits is sometimes a desirable feature in the treatment. The ordinary tubes with changing vacuums are not desirable for radiotherapeutic work, and only those which allow of perfect control of the vacuum should be used. The *x*-ray has a selective influence on the abnormal cells. It lessens hemorrhages and discharges and makes the patient more comfortable and prolongs life even in hopeless cases.

22. **Malaria.**—From his study of malaria in a California town Cadwallader has developed the theory that perhaps the increased proportion of water in the circulation may play a very important part in the causation of malaria, rendering the system more susceptible to infection.

24. **Nephritis in Smallpox.**—The following are the conclusions of Welch and Schamberg from a study of over 1000 examinations in 128 cases of smallpox with special reference to the kidney conditions: "1. Albuminuria is more common in smallpox than is generally believed, having been present in 65 per cent. of the cases examined. The fact that tube casts were found in 45 per cent. of the cases warrants the assertion that the albuminuria in most cases is the expression of a structural change in the kidneys. 2. Cases of discrete variola and well-marked varioloid have, in our experience, been accompanied with nephritis almost as often as cases with more profuse eruptions. This would suggest that the kidney involvement is the result of the influence of the smallpox poison. 3. The daily fluctuation in the presence of the abnormal urinary constituents necessitates repeated examinations in order to avoid misleading results. Microscopical examinations of the sediment will frequently reveal the presence of tube casts when albumin is not present in quantities demonstrable by the ordinary tests. 4. The clinical symptoms of variolous nephritis are, as a rule, mild and by no means as obvious as those observed in scarlatinal nephritis. 5. Arnaud's investigation demonstrates that albumin may persist in the urine in minute quantities after convalescence from smallpox. This occurred in 75 per cent. of his cases. The histological examination of the kidney would indicate that this minimal albuminuria represents interstitial changes in the kidney. 6. If it be true that the albuminuria accompanying infectious diseases is, in large part, the expression of a structural change in the kidneys, is it not probable that the damage thus done may, if unrecognized and uncared for, insidiously eventuate in chronic Bright's disease? 7. The practical lession which is contained in this proposition is that the urine of patients convalescent from infectious diseases should be carefully and repeatedly examined and the diet and mode of life of the patient regulated accordingly.

31. **Uric Acid Diathesis.**—Croftan considers that of the primary cause of uric acid diathesis we know nothing, but he places himself on the neuro-humoral standpoint as defined by Duckworth. The neurosal element, while apparent, is intangible, essentially hereditary and probably not remediable in one generation. The perversions of the uric acid chemism are more definite and are amenable to considerable modification and to correction by dietetic treatment. The characteristics of uric acid diathesis are as follows: 1. The uric acid of the blood is increased. 2. Crystalline deposits of sodium urate are found in certain necrotic tissues. The increase of uric acid in the blood can be due to increased formation of uric acid, which is usually in an analytic way from disassimilation of more complex compounds. The latest view is that uric acid is specific, a metabolic product of a special kind of albumin, namely, nucleins. These are the chief constituents of all cell nuclei and hence are contained in many articles of food and also in our tissues. The food nucleins we can control; the tissue nucleins we can not. The decreased destruction of uric acid is, the author thinks, a more prolific cause of uric acid accumulation than over-production. The retention of uric acid can not be definitely ascertained. The deposit of crystalline sodium urate in necrotic tissues must necessarily be due to local factors, probably poor vascularization of the parts may be made responsible to a large extent. The reduced alkalinity of the blood that has been credited is not demonstrated. A more important factor is change in the relative proportion of salts in solution in the serum. The significance of necrosis found in the vicinity of urate concretions is still obscure. As regards the dietetic treatment the two chief indications are: 1, to prevent the increase of uric acid in the blood; 2, to promote the solubility of uric acid either in the blood or in the concretions that have already formed. To reduce the production is one of the most feasible methods and the restriction of articles of food containing many cell nuclei must necessarily decrease the formation. The moderate use of uric acid forming food is rational treatment. We know too little of the normal mechanism of uric acid destruction to enable us satisfactorily to regulate this process, but certain dietetic rules can directly and indirectly aid in the elimination of uric acid by exercising an effect on the circulation and the renal excretion, indirectly, by sparing the heart and kidneys and enabling them to perform their function in a normal manner. Whether or not alkalies introduced into the system are capable of influencing the alkalinity of the blood and thus enhancing the solubility of urates is more than uncertain. But this is a popular belief and we may recognize that certain articles of food can increase alkalinity and others reduce it. Many foods contain alkaline salts, others acid salts of organic acids that are converted into carbonates in the body, and both impart an alkaline reaction to the urine. Sulphur and phosphorus in albumins are oxidized to sulphuric and phosphuric acids, and in this way reduce the alkalinity of the blood. We have also certain uric acid solvents, among them urea. Whether these will act in the blood stream as well as in the test tube remains to be determined. The following special rules are laid down: As regards the use of meat he thinks there is little difference between the so-called white and dark meats. Meats containing many cell nuclei, such as liver, kidneys, sweetbreads, brain, etc., and meat extracts, broths, gravies, etc., should be excluded. He holds that a certain amount of meat is necessary, while too much is bad. The digestibility of certain kinds must be considered. Eggs in moderation may be permitted, but he restricts the use of the yolk; the white has no effect on the uric acid increase. An exclusive milk diet is also bad in old people, but as an addition to a mixed diet is good if it can be borne. We must individualize. Its theoretical disadvantages are overcompensated by its highly nutritious character and its power to stimulate diuresis. On empiric grounds he excludes cheese from the dietary, though there is no compelling scientific reason for doing so. As regards fats there is no valid objection to their use in moderation. Carbohydrates have no appreciable effect on the uric acid increase, but their bulk and tendency to fermentation should be considered. They should be restricted, therefore, and in cases complicated with diabetes or obesity should be forbidden altogether or replaced by fats. In dyspepsia they should also be restricted, and in those inclined to overeat. These remarks apply to certain bulbous vegetables which contain a large amount of carbohydrate, but green vegetables, salads, etc., with the exception of young germinating plants like asparagus, may be given freely. Celery and onions are to be forbidden on account of the irritating oils they contain; tomatoes on account of the acids they incorporate. All spices and condiments should be avoided, as they irritate the digestive tract and overstimulate the appetite. All fruits, either deciduous or citrous, may be permitted. The crude

acids have no distinct effect on the increase of uric acid with the exception of tannic acid, which seems to increase it. Water should be the chief beverage, but not taken in excess; the flooding of the circulation with water is detrimental. The uric acid patient should drink one or two liters of water a day, no more or less, and it is better to take it in small quantities than in large quantities at long intervals. The uric acid solvent virtues of many mineral waters are problematical to the author. Tea, coffee and cocoa are generally forbidden and are to a certain degree restricted by him. Tea is preferable to coffee. Alcohol is generally to be forbidden on empirical grounds, except in some rare instances where the patients are accustomed to it. Champagne, sweet wines, cider, liquors and malted liquors are to be absolutely avoided. As in other dietetic treatment we should consider the previous habits of the patient, his temperament and character.

32. **Cholelithiasis.**—Weber treats the acute attacks of cholelithiasis with small hypodermics of morphin not less than one-quarter of a grain, a hot linseed poultice locally, a large enema to relieve and empty the rectum, and later, when nausea and vomiting have ceased, calomel or compound cathartic pills for thorough cleansing of the intestines. As regards olive oil by the mouth he has not been able to satisfy himself, but he has been in the habit of following up an acute attack of gallstone colic by an enema of 4 to 6 ounces of warm olive oil high up in the bowel, to be retained over night and followed by copious flushing next morning with water, not soapsuds. The above described palliative treatment will not disappoint us so long as there is no manifestation of firm incarceration of one or more big calculi in the ducts of the viscus, and no empyema of the gall bladder. The paroxysm being over and when one is satisfied that there are only small concrements in the bladder, some of which have passed, he puts the patient on a proper diet, excluding all food rich in lime and magnesia salts, particularly peas, beans and certain cereals. The patient must eat sparingly, be very moderate in the use of alcohol, keep his bowels very regular and drink twice daily a half pint of hot Carlsbad water before eating. In cases of large gallstones crowding the ducts, the surgeon should be called in. Massage of the gall bladder has been recommended, but reflection shows that it is injurious. In chronic cases he found cases of solitary or large calculi in the gall bladder without enlargement of it, without icterus, but with chronic ailment which is altogether difficult to treat. Medical treatment, as a rule, does little good, and the surgeon must generally be called in. In a case of hydrops which caused but little pain, showed slight transient icterus, and was complicated with right floating kidney, he has seen good result from prolonged Carlsbad cure and the adjustment of the floating kidney. All chronic gallstone disease, which never has severe attacks, or at least moderate relapses, requires careful supervision and treatment. He advises the use of alkaline waters and diet as above described at least twice a year and for four weeks at a time, in addition to this, hydrotherapeutic procedures like Turkish baths, etc.

33. **Laryngeal Tuberculosis.**—Levy has studied and discusses some 205 cases observed in Colorado, and finds that in cases in which both lung and throat lesions developed in Colorado, the latter showed itself at least forty-eight weeks later than in those originating elsewhere. In cases where the lung lesion developed elsewhere and the throat lesion in Colorado the throat lesion manifested itself on an average of 62.3 weeks later than those originating elsewhere. That is to say that as far as the development of laryngeal tuberculosis is concerned the effect of high altitude is to retard it by more than one year.

52. **Normal Involution of the Appendix.**—The fact first noticed by Senn and Ribbert, that the appendix normally undergoes an involution process marked by a disappearance of the mucous coat with obliteration of the lumen of the appendix, is discussed by Morris, who gives facts in his observation in regard to it. He notices the symptoms that seem to attend this involution and concludes that the solid replacement tissue is practically scar tissue, and that this scar tissue of the appendix contracts and irritates nerve filaments that are involved in its extent. These produce sympathetic irritation of the intestinal plexuses, interference with their function and the various symptoms complained of. He says the symptoms accompanying normal involution of the appendix belong particularly to middle life, though they sometimes become marked as early as the twentieth year. The appendix usually feels harder than normal on palpation. The abdominal muscles are unnaturally resistant, protecting the irritated appendix very much as they do the infected one. He has seen the same symptoms to a large extent in tuberculosis of the organs. The treatment is symptomatic unless the disturbance is sufficient to call for removal.

53. **Normal Saline Solution in the Abdomen.**—Humiston gives an account of his method of using the peritoneal cavity as the inlet for large quantities of saline solution during abdominal operations. After partially closing the wound he pours into the cavity through a glass funnel not less than two quarts of normal saline solution at a temperature of 112 F. and quickly ties the few remaining sutures previously introduced. Within a few minutes the anesthetizer notes a change in the pulse, its rate diminishing, lowering tension and increasing fulness. The color of the face more nearly approaches the normal and usually the patients have little or no thirst for the first eighteen hours, have less pain, and require no enemata of any kind, and are thus kept free from the annoyance of too much nursing. In vaginal celiotomies where this method can not be employed he begins to have the saline administered subcutaneously, the trocar entering at the junction of the anterior axillary border at a line on a level with the upper border of the right breast, being plunged downward, backward and inward, so that the fluid finds the loose tissue in the axilla and backward underneath the scapula rather than under the breast. In this position, with a very little massage, three or four quarts can be injected with four feet of pressure. In emergency work outside of hospitals with limited assistants and absence of sterile salt solution he has used unsterile salt solution by allowing the sigmoid and colon to be slowly filled with the liquid. This is easily accomplished in the Trendelenburg position and the peritoneal cavity opened to permit of the ready guidance of the tube above the pelvic brim. Large quantities can be used in this way without hindrance in the field of operation. The rapidity of the absorption can only be appreciated by actual observation. Another use of the saline solution is shown in the fact that for a number of years he has not flushed a cavity nor used the drain. He has found that the filling of the peritoneal cavity after the tampon has been placed tends toward the dissolution of clots and the carrying off of effete material within the pelvis through the capillarity of the tampon. He has never had a bad result from this method. There are no certain indications for its use, but on the other hand he is certain that many a case of sepsis, septic nephritis and low cardiac vitality has been saved. Several cases are reported.

54. **Ectopic Pregnancy.**—From his own experience and that of his confrères Clarke is satisfied that no hard and fast rule should be established for the management of all cases of shock or collapse from rupture occurring in ectopic gestation. Shock is no guide to the amount of hemorrhage, even if it is large it may not long continue. In such cases much can be successfully effected by way of stimulation, opiates and employment of salt solution. Constitution and condition of the patient should be considered and perfect quietude should be enjoined. Operation is not always easy and the results are sometimes far from being satisfactory. The object of immediate treatment of whatever character is to lessen suffering and save life if possible. If operation can be dispensed with until more favorable conditions are present, it is the better course to pursue.

56. **Rectal Stricture in Women.**—Watkins describes a new operation, which consists in taking a portion of the vagina to make up a deficiency in the rectum by separating the recto-vaginal septum along the median line and making it one canal, as would result from complete perineal laceration, following this by suture of the vagina to the rectal mucosa on either side

with fine catgut; then performing a section of the vagina on both sides, making a blunt dissection of the two flaps on either side, with suture of the vaginal flaps thus transporting a part of the lumen of the vagina to the rectum. He says it is not difficult after turning a large amount of the vaginal mucous membrane into the rectum to restore the sphincter ani, as the lower end of the two flaps mentioned are in close proximity to the ends of the sphincter muscle.

57.—See THE JOURNAL of August 9, p. 304.

60. **Ovulation.**—The conclusion reached by Drennan is that ovulation occurs in the middle of the intermenstrual period.

63.—See abstract in THE JOURNAL of October 4, p. 857.

66.—See abstract in THE JOURNAL of October 25, ¶4, p. 1017.

69. **Chronic Enteritis.**—Turck's paper calls particular attention to the disorders of the splanchnic circulation as a cause of this condition; not only the obstructive, or passive form, but congestion without obstruction may become a potent etiologic factor in enteritis, such as congestion due to chilling of the surface, exposure after sweating. He has experimented with various irritants on the intestine with special observation as to the effect in regard to splanchnic congestion, and he finds that the effect of such a congestion is to cause an enormous loss of the normal resistance to infection. He reports a number of cases illustrating his views, showing the association of disturbance of the abdominal circulation with chronic enteritis, and that an important indication in the treatment of this condition is the correction of these disturbances. He reviews the treatment, the use of intestinal cleansing injections, gastric lavage and gastric gymnastics with the rubber stomach bag, and describes a practical method which he considers to be useful in some forms of enteritis such as mucocolitis and in its later stage, membranous colitis, which consists of adding 3 to 5 per cent. of ground slippery elm bark to water, adding any antiseptic of medicaments that may be desired in using it for injections or lavage. It forms a thin mucilage which overcomes all the irritating effects of the water and allows of a higher degree of heat of injection. With these he also uses pneumatic gymnastics, which he has described elsewhere, to affect favorably the circulation.

78.—This article has appeared elsewhere. See THE JOURNAL of October 25, ¶36, p. 1072.

87. **Otitis Media.**—Carhart calls attention to the importance of infection by way of the middle ear and the large proportion of children that have suffered this. According to Ponfick's statistics in 100 consecutive autopsies otitis media existed in all but 9, though not suspected in the majority. He thinks the examination of the ear should be a routine practice. The principal thing in treatment is to prevent the retention of infective products in the ear.

91. **X-Rays in Cancer.**—Deming reports a number of cases selected on account of their being advanced types, which were treated by the *x*-ray. He thinks this agent has the power of relieving pain in the majority of cases. An action in all cancerous tissues is obtained which unquestionably in many instances has, at least, prolonged the lives of hopeless cases, and so far as known produced in many others most flattering results. We have yet to learn how lasting the effect is. While in strictly operative cases we can not for any reason substitute new methods concerning which comparatively little is known, in operable cases where recurrences have followed operations, it is to be without question recommended, as well as employed after operation as a preventive before secondary lesions have occurred. All of his cases were treated with the tube close to the skin for the first few treatments, the length of exposure varying from five to ten minutes, and Mueller's tube was generally used in connection with the coil. Where only a small area required treatment a glass funnel was employed. Following the raying the cases were sprayed with static breeze which acted as a counter-irritant. He finds that frequent exposures with high intensity acted the best at the commencement of treatment, particularly in severe cases, later using some prolonged but less frequent treatment, with penetration somewhat reduced.

96. **Tuberculosis.**—The early symptoms of tuberculosis, such as increase of pulse, slight cough, dyspeptic disorders, nervous irritability, quick fatigue, etc., are reviewed by Pottinger, who calls attention finally to the tuberculin test which he advocates as a valuable diagnostic method, without the dangers that are charged to it. The *x*-ray and sputum examinations are also mentioned.

102. **Apocynum Cannabinum.**—Hildreth finds this drug very useful in edema accompanying varicose conditions, especially the varicose ulcers of elderly persons, and in this his experience agrees with that of others. He has also found it useful in general anasarca from other causes. How it acts is a question, yet the clinical fact is more valuable than the theory. In a general way it seems to act like digitalis, but has no cumulative tendency and no unpleasant after-effects if given in moderate doses. The preparation he has used most is Lloyd's tincture in doses of 2 to 3 minims in water every three or four hours. If given for some time a tolerance may be established requiring the administration of larger doses. He has never used it in the dropsy accompanying nephritis; it could hardly be expected to act as well as in the more passive conditions. It is said to be of value, however, in chronic Bright's disease, lessening the albumin and casts as well as the anasarca.

110.—This article has appeared elsewhere. See THE JOURNAL of October 25, title 53, p. 1069.

113. **Gastric Disorders.**—Harbin calls attention to the disorders of digestion due to enteroptosis and hyperacidity and the methods of their diagnosis and treatment. He says, in conclusion: "1. Every general practitioner can make a diagnosis of gastroptosis by the splashing sounds. By palpation he can recognize a nephroptosis and greatly relieve both conditions by an abdominal belt. 2. One-half of all digestive disturbances are attended with hyperacidity. 3. We can not diagnose hyperacidity with certainty, except by a test breakfast. 4. Lavage in mornings before breakfast with calcined magnesia relieves the pain and discomfort of hyperacidity. 5. The intragastric application of the faradic current gives strength to the involuntary muscles of the digestive tract and the voluntary muscles of the abdominal wall. 6. The physician and gynecologist too often consider gastric symptoms as a reflex disturbance of diseased female generative organs."

118.—This article has appeared elsewhere. See THE JOURNAL of October 25, title 53, p. 1069.

119.—Ibid., ¶36, p. 1072.

121. **The Criminal.**—Pinckney's article is a discussion of the degenerate in relation to criminality. He calls attention to the fact that this country and Australia were settled under very different conditions, and that both developed alike, notwithstanding the number of degenerates and criminals transported to Australia inside of 100 years and the law-abiding high-class population that originally settled this country. This fact is in striking contrast to the increase of insanity in all civilized countries. Criminality seems rather to run itself out, while degeneracy still more tends to the disease consequence of insanity. He says it is evident that the innate restraining forces in the criminal are coming to the top.

123. **The Southern Negro.**—Perry reviews the facts in regard to the tendencies of the southern negro under modern conditions, the spread of venereal diseases, which is greater on account of their lack of control, tuberculosis which formerly was almost unknown and is now becoming a scourge, and insanity, which has increased twenty-fold. He does not wish to appear pessimistic, but simply to state facts without prejudice to those honest negroes who are endeavoring to elevate their race. He hopes that with their wider knowledge of facts some good might come to the negro and to society at large.

131. **Prostatic Hypertrophy.**—Prioleau concludes that in the majority of cases this condition is in the scope of the general practitioner's work, and that the majority of even aggravated, infected cases can be relieved and made comfortable without capital surgical intervention, but with judicious, cautious, aseptic catheterization, bladder washings, selected

diet, proper clothing and abstinence from alcohol and carbonated beverages.

132. **Tuberculosis.**—McHaton gives facts to show that tuberculosis is largely dependent on external conditions, referring in support of this view to the conditions among the negroes who in slavery times were almost free from the disease. The coolie experience in Cuba is also adduced as well as a Spanish colony in Central America, which immigrated there on account of its general tuberculous condition. It consisted at first of only ten families, living isolated with constant intermarriage, but has now become a remarkably superior and non-tuberculous community. On the other hand, non-tuberculous families by changing their modes of living have become uniformly tubercular, and he gives an instance. He asks, in conclusion, is tuberculosis a disease of environment only?

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), October 25.

1 *A Discussion on the Treatment of Inoperable Cancer. Henry Morris and others.
2 *The Treatment of Inoperable Cancer of the Breast by the X-Rays. Thomas Bryant and others.
3 *A Discussion on Tuberculosis of the Testis, Prostate and Seminal Vesicles. Thomas Myles.
4 Two Cases of Chronic Pancreatitis Treated by Laparotomy. Edmund Owen.
5 *Experiences in the Extirpation of Tuberculous Lymph Glands During the Last Thirty Years. Rushton Parker.
6 *The Value of Imperfectly-Descended Testis. (To be continued.) W. M. Eccles.
7 Discussion on Radiography, X-Ray Treatment, the High-Frequency Method and Light Treatment. Dr. Freund and others.
8 A Note on the Histology of X-Rayed Lupus Vulgaris. George Pernet.
9 *The Pathologic Changes in the Skin Produced by the Rays from a Finsen Lamp. J. M. H. MacLeod.
10 The T. R. Tuberculin Treatment of Lupus Vulgaris at University College Hospital. H. Radcliffe Crocker and George Pernet.
11 Blastomycetic Dermatitis in the Negro. T. Caspar Gilchrist.
12 A Discussion on the Treatment of Psoriasis. Malcolm Morris.
13 Seborrhea. Norman Walker.
14 Tumors of Xeroderma Pigmentosum. George Pernet.
15 The Heart and Nervous System. David Ferrier.
16 Serumtherapeutics and Carcinoma. Wm. James Hoyten.

The Lancet (London), October 25.

17 *The Heart and Nervous System. David Ferrier.
18 Tuberculosis of the Peritoneum from a Clinical Point of View. Edmund Owen.
19 *Some Morbid Conditions of the Mouth. Edmund W. Roughton.
20 Illustrative Cases of Gunshot Wounds of the Skull and Brain. L. G. Irvine.
21 *Mental Dissolution the Result of Alcohol. Robert Jones.
22 Case of Extrauterine Associated with Intrauterine Fetation, in Which Abdominal Section Was Performed. John Phillips.

Intercolonial Medical Journal of Australasia (Melbourne), September 20.

23 *The Causation and Probable Pathology of Fibrinous Bronchitis. J. R. Harris.
24 *The Abuse of Creosote and Guaiacol in the Treatment of Phthisis. Duncan Turner.
25 *Tuberculosis in a Mining Community. B. Stewart Cowen.

Australasian Medical Gazette (Sydney), September 20.

26 Complete Prostatectomy and the Bottini Operation. H. V. Critchley Hinder.
27 A Case of Placenta Previa with Contracted Os and Rigid Cervix. C. E. Todd and H. A. Sweetapple.
28 Placenta Previa. H. A. Sweetapple.
29 Three Cases of Meralgia Parasthetica. George E. Rennie.
30 Therapeutics of the Roentgen Rays. L. Herschel Harris.
31 A Case of Complete One-sided Gigantism with Enlargement of the Opposite Side of the Brain. C. Reissmann.
32 Records from General Practice—Cases of Abortion. J. A. Cameron.

Bulletin de l'Academie de Med. (Paris), October 14.

33 *L'asphyxie toxique et la mort apparente par l'oxyde de carbone. Traitement par les tractions rythmées de la langue. J. V. Laborde.
34 *Official Report of Delegates to International Conference for Unification of Heroic Remedies. E. Bourquelot.

Presse Medicale (Paris), October 8 to 15.

35 (No. 82.) *De l'ablation esthétique des tumeurs bénignes mammaires. H. Morestin.
36 (No. 83.) *Technique de l'incision prérectale appliquée à la chirurgie génitale chez l'homme (Prostatectomie et Spermatocystectomie). R. Proust.
37 Le tannin dans la tuberculose. A. F. Plicque.

Deutsche Med. Wochenschrift (Leipsic), October 16.

38 *Inoculated Metastases of Carcinoma. Olshausen.—Impfmetastasen der C.
39 *Die Agglutination der Streptococcen. F. Meyer.
40 Ein Visir-Meter. U. Mayeda (Nagoya, Japan).
41 *Painful Feet. A. Schanz.—Schmerzende Füsse.
42 Ueber den Einfluss (influence) des Lecithins auf den Eiweissansatz (albumin metabolism). C. Massarin.
43 Vaccination. P. Schenk.—Impfergebnisse und Impftechnik.
44 Nephrotomy in Anuria of Black Water Fever. Werner.—Ist bei Schwarzwasserfieberanurie die Nephrotomie indizirt?
45 Mesotan. T. Floret.
46 *Die Salz-Soda-Lösung (solution) in der Chirurgie. Tavel, Küttner and Baisch.

Muenchener Med. Wochenschrift, October 14.

47 Lungenödem und fibrinose Bronchitis nach (after) Thoracocentese. F. Magenau.
48 Zur Extension. F. Kuhn.
49 Substitution of Paralyzed Quadriceps. Magnus.—Der operative Ersatz des gelähmten Quadriceps femoris.
50 Simulation in Hysterics and Damage Cases. O. Niedner.—Zum Nachweis der S. bei Hysterischen und Unfallskranken.
51 *Zur Therapie und Pathogenese der Stenokardie (angina pectoris) und verwandten Zustände (allied conditions). R. Breuer. (Commenced in No. 39.)
52 *Zur Anatomie und Pathologie der Gallen- (biliary) Organe und des Pancreas. Von Büngner.
53 Detailed Report of Naturforscher Congress, Carlsbad, September 21-27. (Commenced in No. 39.)

Riforma Medica (Rome), ii, 10 to 58.

54 (No. 11.) Rectal Feeding in 3 Cases of Typhoid. A. Claps.—Dell' alimentazione artificiale per via del retto in tifo.
55 (No. 14.) Morbus Basedowii nei 3 bambini (in 3 children). V. Ovazza.
56 (Nos. 16-17.) Azione della chinina sui parasiti della malaria. A. Capogrossi.
57 (No. 18.) Azione delle gelatino-culture protelizzate del bacillo del carbonchio (anthrax) nei conigli (in rabbits). A. Bajardi.
58 (Nos. 20-21.) Alterazione delle capsule surrenali e pellagra. R. Finotti.
59 (Nos. 22-23.) Tetanus Toxin Found in Nerves of Animals Succumbing to Tetanus, Not in Organs. E. Pasquini.—Sulla presenze del veleno tetanico negli organi, etc.
60 (Nos. 24-26.) Sulla cocainizzazione spinale. Schiassi.
61 (No. 27.) Trattamiento degli aneurismi colla gelatina. C. Mancini.
62 (Nos. 28-31.) Sull' origine nevritica dell' angina pectoris da aortite sifilitica. U. Benenati.
63 (No. 32.) Su alcune indicazione del siero fisiologico. L. Fornaca.
64 (No. 35.) 2 casi di diabete insipido trasformati in diabete mellito. L. D'Amato.
65 (Nos. 36-37.) Cytotoxic Serums. E. Ravenna.—Osservazioni intorni ai sieri citossici con speciate riguardo al neuro siero.
66 (No. 38.) Antitoxic Power of Tissues. G. Angelici.—Il potere antitossico dell' organismo e dei tessuti in genere su alcuni veleni.
67 (No. 39.) Di alcuni modificazioni al metodo di Schenk (iperemia artificiale) nella cura della tuberculosi polmonare. T. Silvestri.
68 (No. 42.) Technic for Radioscopy. L. Ferrannini.—La volumetria e i rapporti dei corpi estranei, etc., esattamente determinati con la radioscopia.
69 (Nos. 43-44.) Diazo-Reaction. A. Nizzoli.—Valore diagnostico e pronostico della diazo-reazione.
70 (No. 45.) Sull' valor semielogico dell' epilessia parziale; 2 casi. G. Seppilli.
71 (Nos. 46-47.) Le fibre amieliniche pericellulari e peridendritiche nella corteccia (cortex) cerebrale. L. Ronconi.
72 (No. 48.) Effect of Tuberculin, Mallein, Carbolic Acid, etc., on Frogs and Guinea-Pigs. G. Angelici.—Sulla tossicita della mallein, etc., nelle rane e cavie.
73 (No. 49.) *Metodo di cura radicale contro le varici e le ulcere varicose degli arte inferiori (leg ulcers). C. Mancini.
74 (No. 50.) Hemolytic Power of Aqueous Extract of Tumors. G. Panzacchi.—Sul potere emolitico dell'estratto acquoso dei tumori.
75 (Nos. 55-56.) *La meningo-mielite cronica e la sua cura. S. Personali.
76 (No. 57.) *Nuovo metodo di sutura per l'anastomosi del dotto deferente reciso (of severed vas deferens). A. Ferraro.
77 (No. 57.) Contributo all'intervento chirurgico nei vizii di conformazoine dell' ano e del retto. P. Ferraresi.

Rivista di Pathologia nerv. e ment. (Florence), vii.

78 (No. 8.) *Sull atrofia secondaria indiretta degli elementi nervosi. E. Tanzi.
79 *Su le policlonie nella demenza paralitica. R. Lambranzi.
80 (No. 9.) Sulla presenza di nevroglia nella struttura dei plessi coroidei. G. Catola.
81 *Le alterazioni della cellula nervosa nell' avvelenamento acuto e cronico da iodoformio. R. Giani and E. Ligorio.
82 Contributo allo studio della illusione igrica (sensation of wetness of objects). E. Ravenna and T. Montagnini.
83 Il fascio di Pick. F. Ugolotti.

Revista de la Soc. Med. Argentina (Buenos Ayres), x.

84 (No. 55.) The Cocco-Bacillus of Broncho-Pneumonia and Its Serum Treatment. J. Lemos.—Sobre el coccobacilo de la bronco-pneumonia.
85 Traumatologia forense. Importancia medico-legal de las heridas (wounds) incisas en ciertas regiones de la cabeza (head). J. A. Carreras.
86 (No. 56.) *Adenopatias tráqueo-brônquicas en la infancia. Su influencia en la pertussis febril. A. M. Centeno.
87 Las diversas especies de hemosporideos paludicos en la Republica Argentina. J. C. Delfino.
88 Tratamiento de la hipertrofia de la prôstata. J. N. Posadas.
89 *La remède typhique dans la fièvre typhoide. J. Mendez.
90 Mal de Cadera. J. Lignières.
91 *Topography of the Medulla and Spinal Cord. L. Valle.—Topografia médulo-raquidea.

Hygiea (Stockholm), lxiv.

92 (No. 8.) Croup at Köping. G. Ericsson.—Redogörelse för de kruppfall som vardats a Köpings epidemisjukhus ar 1899-1901.
93 Report in Detail of Fourth Northern Congress of Internal Medicine, Helsingfors, July 4. Main Addresses on "Syphilitic Affections of the Heart" and "Etiology of Nephritis."
94 (No. 9.) *Relations between Diphtheria and Angina Phlegmonosa. H. Ernberg.—Om förhallandet mellan difteri och angina phlegm.
95 *Om Katatonia. F. Svenson. (Commenced in No. 8.)
96 2 fall af erythema scarlatiniforme recidivans. A. Afzelius.
97 Umbilical Hernia. K. Kaijser.—Nagra ord om operationer af nafvelbrack.
98 Lithotomy or Lithotrity for Elderly Men? J. Borelius.—Stensnitt eller stenkrossning vid blasesten hos äldre man?
99 (No. 10.) Om den medullära anestesien. A. Karlow.
100 Diabetes in Different Classes of Society and Its Significance from the Standpoint of Life Insurance. Curt Wallis.—Om sockersjukans förekomst i olika samhällsklasser, etc.
101 *Om Katatoni. H. Lundborg.

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1. **Treatment of Inoperable Cancer.**—After an elaborate review of the various methods of treatment, including serumtherapy, phototherapy, radiotherapy, etc., Morris offers the following conclusions: "1. That the bacterial treatment of malignant disease is not of the slightest use in carcinoma; that not one-half of the cases of spindle-celled sarcoma disappear under treatment with Coley's fluid; that in cases of carcinoma, other than the spindle-celled, Coley's fluid is not of value; that the treatment by Coley's fluid has many dangers, and should never be employed except in absolutely inoperable cancer. 2. That Beatson's treatment is limited in its action to cases of mammary carcinoma . . . and even in these cases only a small proportion are influenced by the treatment, while neither as a cure nor as a palliative can it be relied on in any given case. 3. That rodent ulcer has in Finsen's light and in the *x*-rays its most successful treatment . . . and that this is true not only of cases otherwise inoperable, but also of operable cases, because of their excellent cosmetic results, and of their effect on insidious and non-evident foci. . . . 4. That sarcoma, epithelioma and the other forms of carcinoma are best treated, whenever possible, by early excision; and that all forms of treatment hitherto tried in inoperable cancers of these kinds are uncertain and inconstant in their effects, and unreliable as to the durability of the results they produce. In the vast majority of cases they are quite without palliative influence of any kind, except possibly in relieving pain. 5. That the boundary line between what are considered operable and inoperable cases needs revision from time to time; that the tendency to extend the limits of operable cases needs in some instances to be restricted, and in others there may prove room for further extension. 6. That it is open to question whether some of the operations performed for relief . . . should not be abandoned, and whether in other cases palliative operations ought not to be more often performed. 7. That investigations into both the cause and nature of the cancer are of the first importance, as being more likely to ultimately lead to cure than any treatment at present known. 8. That, with few exceptions, the attempts to cure cancer by means other than early and free operations have been hitherto almost invariably futile. Our complete ignorance as to the cause, nature, and curative treatment of cancer has long pointed to the necessity of instituting a comprehensive, collaborative and coöperating inquiry into the whole question of malignant disease; and it is a source of great satisfaction to know that at last, though after many vicissitudes, sufficient funds have been raised to enable the two Royal Colleges to make, at any rate, a beginning in this wide-reaching and unspeakably important subject."

2. **X-Rays in Cancer.**—The discussion on this subject is opened by Bryant, who reports cases and remarks that much good can be secured in inoperable cancer of the breast and skin; and there is reason to believe, in cancerous disease of the rectum, that relief of pain and the arrest of the progress, if not the disappearance, of local disease, can be obtained by the *x*-rays, but that at present surgeons are not justified in leading patients to expect a cure. It is essential that the treatment should be in the hands of medical experts and not allowed to pass into those of mere mechanics. In the discussion following several surgeons reported good results from the use of the *x*-ray and others reported their failures.

3. **Tuberculosis of the Testicle, Prostate and Seminal Vesicles.**—This subject is treated with conservatism by Myles, who concludes that where only one or two small nodules of chronic type appear in a man of good physique without any signs of general infection and without any enlargement of the prostate or vesicles, a partial operation would generally be sufficient and a more radical operation could follow it if necessary. In those cases where the prostate and vesicles are also involved he does not put much reliance on operative treatment and where suppuration already exists and the testicle is markedly enlarged and practically useless he advocates total extirpation without delay. Where both are involved he would almost shrink from advising complete castration, but it might be a graver responsibility not to advise it. Where general infection exists, of course there is no question that operation is inadvisable. Neither does he believe that a very hopeful outlook in operative treatment of tuberculosis of the bladder can be expected and as regards tuberculosis of the vesicles and limited to this organ, he can say nothing, as he has had no experience of this sort.

5. **Tuberculous Lymph Glands.**—Parker argues the following two points: 1. A more frequent and thorough submission to operation of the milder cases of tuberculosis of the glands; 2, a bolder and more frequent attack of advanced and extensive cases while they continue to occur. He warns everyone not to expect too much from scraping and scooping, but more thorough extirpation is required.

6. **Cryptorchidism.**—The value of an imperfectly descended testis is discussed by Eccles, who reviews the arguments for and against its removal. He thinks that where there is unilateral arrest of one accompanying hernia of the same side, a radical operation is indicated. The testis should be placed in the scrotum if it can be done easily and with the probability that it will not recede, but under other circumstances it should be preferably returned in the abdomen unless there are special reasons for thinking it is more advisable to remove it. If both are alike arrested it is injudicious to cut away either of them, for the amount of internal secretion that they together may produce may be sufficient to cause the proper development of the body in general, while that of one alone may be insufficient.

9. **Pathologic Changes in the Skin from the Finsen Light.**—MacLeod has studied the histologic changes produced by actinic rays in lupus vulgaris in two cases and gives here the details. He says in conclusion it may be asserted: "1. That the action of the actinic rays from an arc lamp on the granuloma of lupus is essentially destructive, and that this destructive process is indirectly produced and is simply the result of an ordinary inflammatory reaction. 2. That the effect of the rays on the surrounding healthy tissue is negligible, so that the doubtful tissue in the neighborhood of a patch of lupus may be safely exposed to them without subsequent injury and scarring. 3. That the destructive process, if the rays are judiciously employed, is not of such an intensity as to prevent subsequent repair, and a few days after it has reached its acme a process of construction sets in similar to that which takes place in the healing of inflammation. 4. That the process of construction is capable of replacing the destroyed granuloma with healthy fibrous tissue, forming a pliable scar, and the epidermis completely recovers from the edema caused by the action of the rays. Hence from the histologic standpoint the treatment of lupus and other granulomatous affections of the skin by the actinic rays is an ideal one."

17. See also title 15 above.

19. **Morbid Conditions of the Mouth.**—This third lecture by Roughton discusses the question of alveolar abscess. This even may be fatal, and he has met three such cases, one of pyemia starting from abscess, another of invasion of the cranial cavity and contents and the third of perforation of the common carotid artery without evidence of pyemia. The last case is notable on account of the absence of pain, the slight degree of fever, with almost entire absence of suppuration and the purely local nature of the process generally. A rapid

ulcerative process laying open the carotid artery was the cause of death. He thinks the peccant organism in the case was the *Streptococcus pyogenes*. Treatment should be energetic, the cause should be removed, but this does not always mean the sacrifice of the tooth, which he thinks is made a little too often. Chronic fistulous and blind abscesses are frequent, but the latter is seldom recognized until the tooth is removed. The treatment of the fistulous form consists in removing the septic material from the pulp chamber of the tooth, and if the tooth can not be rendered useful after this, it should be extracted. He closes the lecture with remarks on dental caries and teaching children the habit of cleansing the teeth. It can not be practiced too early, and in fevers and other diseases the teeth should be cleansed by the nurse. He asks the general surgeon whether he is in the habit of sterilizing the mouth before operating on the jaws or tongue. He does not find the importance of the subject duly insisted on in text-books. The cleansing should be begun many days before operation, if possible.

21. **Alcoholism.**—Jones' paper gives interesting statistics on the consumption of alcohol and its toxic action on the individual and the race. He finds that while the English people drink less per head than those of continental nations, yet the cost of alcoholic liquors in that country last year amounted to nearly $20 per head, not including beer, of which 30 gallons per head were consumed. Moreover, a still more striking fact is that the death-rate from alcohol drinking during the last fifteen years has increased about 42 per cent. in men and 100 per cent. in women. In some of the larger towns it is greater than that from scarlet fever, and all other zymotic diseases taken together. The statistics of alcohol and insanity are reviewed, and he finds from the lunacy commission reports that the cases for which alcohol is assigned as the cause averaged 21.8 per cent. of the whole number for males and 9.5 per cent. in females in England, with a still higher proportion in Scotland. England is over-supplied with saloons. The special effects of alcohol are noticed, and he gives some interesting psychologic data as showing the effects on the mental condition, from investigations made in the laboratory of the Claybury Asylum under the direction of Dr. F. W. Mott. The pathology of chronic alcoholism is also described from data obtained from the same source. Jones believes in the control exercised on the sale of drink by restrictive legislation, and he says he does not think, but knows, that we can make not only our men and women, but villages and even larger communities sober by Act of Parliament if it is enforced. Therefore, he thinks the best working hypothesis for the prevention and cure of all forms of alcoholic disorders, whether mental or physical, must be based on the practice of total abstinence.

23. **Fibrinous Bronchitis.**—The condition discussed by Harris is considered by him to be due to congestive or low inflammatory edematous exudates from the serous lining of the respiratory processes and the cause of this in most cases is engorgement of the pulmonary circulation by temporary or permanent incompetence of the left ventricle, with competence of the right ventricle, but that the local congestion may, in some instances, be produced by strong vasomotor influences when disease already exists in the tubes; and that the former condition is responsible for the exudation occurring from the lungs instead of the strain being referred back to the general venous system. That fibrinous casts have been found in typhoid, variola, etc., is not an argument against the above conclusions, because we have in all these high temperature and the action of toxins, which tend to weaken the heart and produce edematous fluids in the lungs. In phthisis a local mechanical obstruction may produce local edematous exudates.

24. **Tuberculosis.**—Turner protests against the routine administration of guaiacol and creosote in this disease, which he thinks has become alarmingly common and reports cases. These drugs are apt to impair the digestion, and if we take care of the stomach the lungs will be better able to take care of themselves.

25. **Tuberculosis of Miners.**—The frequency of tuberculosis among miners is noted by Cowen, who finds that there are six times as many deaths among them from consumption as from fatal mining accidents, and that the death-rate among miners over 45 is at the rate of 13 to 1 as compared with that of women of the same class. He thinks we should insist on the destruction of sputum in the mines and elsewhere and the proper ventilation of mines and bedrooms, as well as the other well-known prophylactic measures against this scourge.

33. **Traction of Tongue for Asphyxia from Gases.**—THE JOURNAL has frequently referred to Laborde's method of resuscitation of drowned persons by rhythmic traction of the tongue. He now announces that it is a life-saving measure also in cases of asphyxia from inhalation of carbon oxid, sewer gas, chloroform and illuminating gas. In one case a child had been resuscitated by this means after apparent death from drowning, with no signs of pulse or respiration forty-five minutes after he had been taken from the water. The teeth were pried open and rhythmic traction exerted on the tongue while the throat was tickled. In five minutes the child vomited and respiration was re-established at the same time. Ten days later the parents sent for the doctor again, as the child had suddenly died without any sign of sickness. He was in cadaveric pallor, the limbs relaxed, no sign of heart action or respiration. The air of the room was laden with the products of defective fuel combustion. After energetic traction of the tongue for ten minutes the child was restored. A second case was a woman who had tried to commit suicide by inhaling charcoal fumes. All measures to resuscitate her proved futile until five minutes of traction of the tongue restored the respiratory function. In a similar case the patient continued to breathe faintly on removal to the open air, but profound coma persisted, with complete loss of general and corneal sensibility, the entire body cyanosed, respiration jerky and pulse irregular and almost imperceptible. Inhalation of oxygen, artificial respiration, etc., failed to alter this condition, but traction of the tongue aroused the patient for an instant, after which she relapsed again into the coma. By the end of a half hour of this exercise with the tongue the corneal sensibility was faintly perceptible in one eye, and by the end of another half hour the pulse and respiration seemed a little less irregular and the other cornea exhibited a slight reaction, but the patient sank again into profound coma whenever the tractions were suspended. After two hours more oxygen was administered, on which the condition at once became alarming, with arrest of pulse and respiration, but again the patient was revived by the tractions. They were renewed again several times during the day and the coma gradually wore off by the end of three days. The engineer and fireman in a torpedo boat became asphyxiated and fell wedged behind the boiler in such a way that no means of resuscitation except traction of the tongue were possible, and this only for one of the men. It was promptly applied and he was restored so that he could extricate himself. The other could not be reached until this occurred, and it was then too late. In a case of intoxication from illuminating gas the patient was restored after forty-five minutes of traction of the tongue. In another case thirty minutes sufficed, but the tractions had to be repeated several times during the day as the respiratory function seemed again to flicker and be on the point of going out. [The recent death of the novelist Zola from carbon oxid, generated by a stove using "patent fuel" with the chimney accidentally obstructed, renders this subject peculiarly timely. He had fallen on the floor and had been dead for hours when found, while his wife still in bed, although respiration and pulse had vanished, showed a certain pinkness of the skin, and after twenty to twenty-five minutes of rhythmic tractions of the tongue, supplemented by Sylvester's method of artificial respiration, she was restored. (See editorial in last issue.) The *Gaz. Med. de Paris* states that an hour elapsed after the asphyxiated pair were discovered before a physician could be found to attend them. The lack of provisions for emergency relief at Paris is a theme to which it frequently recurs, constantly holding up as a model to the Paris authorities the police patrol wagons and stations in certain American cities.—ED.]

34. See THE JOURNAL, November 1, p. 1123.

35. **Esthetic Ablation of Innocent Tumors of the Breast.**—Morestin describes two cases in which he removed a tumor about the size of a walnut from a prominent location on the breast of society women, without leaving a trace of the intervention nearer than the axilla. He made a large incision in the axilla and opened up a passage down to the tumor under the skin. He was then able to work the part of the breast containing the tumor up into the incision and excise it with ease at this point. When the breast was released it slid back into its normal position and there is no trace of the operation except the hidden scar in the axilla.

36. **Technic of the Prerectal Incision.**—Proust illustrates with 11 large cuts the various steps of the technic by which it is possible to open up a wide avenue of entrance into the small pelvis through the perineum without injury of any organ. He calls special attention to the detachable zone which he has discovered back of the prostate. The urethro-rectal muscle is the key to this zone and must be severed before it can be entered.

38. **Inoculated Metastases of Carcinoma.**—Olshausen states that he performed a laparotomy on account of what he found to be an inoperable carcinoma of the ovaries, and closed the abdomen at once. The patient died two weeks later from embolism and the autopsy disclosed hundreds of metastases in the peritoneum which had not been there at the laparotomy, fourteen days before. In another case the patient had had both ovaries removed on account of papillary cystomata in the broad ligament. She was 29 years old and has never menstruated since. Twenty years later a large tumor developed in the abdominal wall projecting outward instead of inward, and bounded on one side by the linear scar left from the preceding laparotomy. It spread along one side of the scar, but did not invade the other side, demonstrating, he thinks, its character of a metastasis from inoculation. He has witnessed a number of cases of pseudomyxoma developing in the peritoneum after ablation of an ovarian cystoma with jelly-like contents. Marchand observed these pseudomyxomata on the upper surface of the diaphragm in one case, corresponding in every respect to the primary tumor. Baumgarten has also published a case in which metastasis of a benign tumor had occurred in the abdominal wall. After extirpation of a non-malignant ovarian cystoma a number of small metastatic tumors developed, both in and outside of the peritoneum, provided with the same epithelium noted in the primary tumor.

39. **Agglutination of Streptococci.**—Meyer has established that streptococci derived from various sources may be agglutinated by corresponding prepared serums. Also that there can be no question as to the diversity of various families of streptococci. His research has also convinced him that it is unwise to use bacteria for the production of a bactericidal serum for therapeutic use, which have been rendered more virulent by passages through animals. The specific agglutination is disturbed by this process, which he thinks is an argument against it.

41. **Painful Feet.**—Schanz describes the class of patients who complain of pains in the heel, sole, joints or toes, even of obstinate corns, but examination of the foot reveals nothing abnormal. Such cases are all attributable to flatfoot. The instep may appear normal, when in reality an unusually high instep has been transformed into a very low one and thus be really flatfoot, although it is still within the limits of the normal instep. There is no typical localization of the pains of flatfoot. Whenever he meets a well-dressed man who clings to old, worn-out shoes as the only ones he can wear with comfort, he is seldom wrong in the diagnosis of flatfoot. Treatment should be that for flatfoot, and he has found a celluloid rounding sole a convenient appliance. It can be molded to the foot when soft and the shape changed at will.

46. **Tavel's Salt-Soda Solution.**—See THE JOURNAL of November 8, p. 1219.

51. **Pathogenesis and Successful Treatment of Angina Pectoris.**—Breuer confirms the remarkable benefit to be derived from theobromin in these conditions as announced by Askanazy in 1895. The diuretic influence of this drug is familiar, but its property of promptly arresting the pains of angina pectoris, cardial asthma and allied conditions is less generally known, and yet Breuer considers it one of the most blessed facts in modern therapeutics. He describes over a dozen cases in detail, showing its rapidly beneficial influence in all pains of arterial origin. They form a series ranging from pure angina pectoris to attacks of pain attributed by the patients to the head, stomach, shoulder, kidney or intestines, and apparently with no features in common with angina pectoris, yet all show by the prompt response to theobromin that they have a common origin in the arteries and that theobromin has a specific action on the latter. Arteriosclerosis and certain other affections of the arteries are liable to cause constant pains in the vessels which may radiate to remote regions. The pains may be due to increased blood pressure and distention, but they are also liable to be caused by spasmodic contraction of the arteries. These contractions occur by preference in the smaller arteries and are the result of pathologic or pathologically exaggerated reflexes originating in the diseased vascular wall. They are set in motion by various causes which raise the blood pressure, emotions, muscular exertion, the horizontal position in sleeping, etc. They are especially liable to occur in the organs which require the largest supply of arterial blood, such as the digestive tract, heart and muscles. The arterial fluxion induced by increased function starts the attack of pain. The spasmodic contraction of the arteries causes symptoms of ischemia as the arterial supply is cut off from muscular organs. In the extremities it becomes evident as intermittent claudication; in the digestive tract as paresis and meteorism; in the heart, as sudden inadequacy and paralysis. Sensory phenomena may be superadded to these and it becomes difficult to decide whether the pains are due to the vascular spasm or to the ischemic parenchyma. When the vessels of the heart are directly or indirectly involved the specific angor cordis develops. The lesions of the heart arteries may radiate the pain to remote regions. The spasm of the heart arteries is peculiarly intense when it is not the result of the usual causes, but is due to direct irritation of the intima by a thrombus or embolus. This explains the sudden death that may occur from a small embolus in one of the terminal ramifications of a coronary as well as in case of obstruction of a large artery from this cause. Theobromin has evidently some action on the spasmodic contraction of the arteries, and when this is controlled the pain ceases. It may also act by diminishing the reflex excitability or by reducing the arterial pressure. Be this as it may, the fact is established that theobromin is a powerful and harmless remedy for pains on an arterial basis. Breuer always gave it in the form of diuretin (Knoll), in doses of .5 gm. four or five times a day, and in the severest cases 3 to 4 gm. a day. The only objection to its use, he remarks, is the high price charged for the preparations of theobromin.

52. **Anatomy and Pathology of the Biliary Organs and Pancreas.**—Büngner's communication was read at the Naturforscher Congress and presented some new views. He found in 58 cadavers that the common bile duct passed directly through the head of the pancreas in 95 per cent. and was so solidly imbedded for a distance of about 2 cm. that it could not be detached from the head without cutting. In 98 to 99 per cent. of all cases the bile duct and the pancreatic duct did not unite, but terminated at separate points in the duodenum. The mouths of the two ducts were separated by a space of .2 cm. on an average, and generally the pancreatic passed beneath the bile duct. The pancreatic duct had a small branch in 10 per cent., this branch debouching separately in the duodenum. These facts explain why the symptoms of obstruction of the biliary passages are liable to accompany any affection of the head of the pancreas. An isolated affection of the biliary system, on the contrary, is not accompanied by retention of pancreatic juice. The latter is unaffected by a lesion in the bile duct, while the flow of bile is not affected by a lesion in the pancreatic duct. But a lesion in the ampulla where both ducts debouch into the duodenum is liable to cause obstruction of both ducts and the symptoms of biliary retention are added to those of pancreatic retention.

73. **Circular Incision for Leg Ulcers.**—Mancini urges the importance of stretching the nerves during this operation, and also to make the incision higher on one side than the other, to add to its length. This method of treating varicose ulcers has proved remarkably successful in his extensive experience. [See THE JOURNAL of August 2, p. 289.]

75. **Treatment of Chronic Meningo-Myelitis.**—Personali has treated 16 cases of chronic meningo-myelitis by suspension and immobilization. Eight have been clinically cured, 4 extremely improved, 2 refused to continue the course and the results were negative in only 2. He excludes cases of syphilitic origin and also all very old, inveterate ones. He commences treatment with suspension for one minute a day, increasing by one minute to the fourth day, then applying four minutes' suspension a day for ten or twelve days. He then immobilizes the patient in a plaster corset in the dorsal decubitus. By the end of the third month the patient is allowed to sit up in bed, commencing very gradually, and finally to walk a few steps. He then suspends the patient as before and applies a second cast, but without such strict immobilization in bed. This cast is removed in two months and a strong corset applied and worn for two or three months, when the cure is complete. The effect of this treatment has been marvelous in his experience. The pains disappear in a day or so and the patient gains rapidly in weight. Constipation should be guarded against, and he supplements this mechanical treatment by daily injection of arsenic, for which he prefers a mixture of 2.5 gm. sodium cacodylate and 5 drops phenicated alcohol in 50 gm. distilled water.

76. **Anastomosis of Severed Vas Deferens.**—Ferraro has experimented on dogs for a method of uniting the stumps after the vas deferens has been intentionally or accidentally divided. He makes an incision across half the vas a few mm. from the end of the stump, and then incises from the middle of the first incision to the end of the stump, forming a T. The end of the vas released by these incisions spreads out into a square, almost flat, flap. The same procedure is repeated on the opposite side of the other stump, and the two square flaps thus produced are sutured together. The anastomosis is perfect and solid.

78. **Indirect Secondary Atrophy of the Nervous System.**—This elaborate research by Tanzi details experiments made on rabbits, dogs, etc., as to the effects of destruction of the sensory trunks traced back through the other neuron elements to the cortex. They find that the lesions in the nervous system of new-born animals do not cause the complete degeneration of the secondary neurons that is produced in the neuron directly wounded. The neurons having a simple connectional relation with those wounded, but not directly injured themselves, may undergo processes of atrophy but not of total destruction. In consequence of the destruction of the primary optic neurons, the secondary tracts undergo a process of atrophy that does not alter the morphologic character of the elements. They become diminished in size, but preserve in a lesser degree their external configuration and their internal structure. In the nuclei where the primary tracts terminate, the atrophy is considerable in mass and is chiefly due to destruction of the nervous terminations of the neurons primarily injured; an interstitial atrophy to which the neurons of the second order contribute in so far as they become lacking in dendritic prolongations and therefore reduce the amount of gray tissue. Indirect atrophy of the neurons of the third and fourth order may be altogether lacking, as, for example, in the visual cortex of rabbits, after enucleation of the eyes. The atrophy continues of the same type, that is, reduction in the size of the cellular elements, but preserving the morphologic character. Tanzi finds that the lower the order of animals the less the atrophy. For instance, there is an absence of cortical atrophy in rabbits; it is only slight in cats, evident in dogs, and in man is also pathologically observed, hence it follows that the cortex is more sensible to the suppression of stimuli in the higher orders of animals. He also finds the same conditions in the organs and cells. The subcortical ganglia which have the most stable and automatic function show much less effect of the absence of stimuli, while the cortex is most affected. His conclusion is that the most highly developed nervous centers are the most sensitive to suppression of stimuli, and that animals are most affected which have organs highest developed as compared with other animals.

79. **Paresis.**—Lambranzi has observed a case of paresis which commenced by polymyoclonic symptoms, subsequently developing into a well-marked case of paresis.

81. **The Effect of Iodoform on the Nerves.**—Giani and Ligorio have studied the effects of iodoform poisoning on the nerves. They find in the chronic type the lesions are less evident and a large number of the nervous elements escape, while in acute iodoform poisoning, on the other hand, the nervous lesions are always more grave throughout the whole cerebrospinal axis.

86. **Influence of Tracheo-Bronchial Adenopathy in Whooping Cough.**—The almost inevitable inflammation of the tracheo-bronchial glands in whooping cough is evidently a localization of the specific infection, aggravated possibly by secondary infection. It does not cause fever unless so extensive as to constitute an actual complication. When tuberculosis of the lungs follows whooping cough Centeno attributes it in the majority of instances to primary tuberculous infection of these glands.

89. **"Typhic Remedy" in Typhoid Fever.**—Mendez published four years ago the results of successful research on the vaccine of anthrax, and he has since been applying the same methods to the treatment of typhoid fever. He prepares the specific substance in the form of a powder instead of a serum, and reports 65 typhoid patients treated with it with one death. Benefit was apparent in every case. The temperature gradually subsided to normal and the diazo-reaction and albumin vanished from the urine. The general condition became remarkably improved by the third day after the injection and convalescence was established by the fifth to seventh day. He notes as an interesting fact that the roseolæ persist and may not appear until after the temperature and pulse are normal once more. One patient died from perforation of the intestines five days after entering the hospital; in this single case the diazo had persisted unmodified by the injection. No other treatment was instituted in any case except a few injections of caffein. The author is professor agrégé of clinical medicine and has charge of the antitoxin laboratory.

91. **Topography of Medulla and Cord.**—Valle's article is illustrated with 9 engravings and 11 curves and establishes that the relations between the vertebræ, roots and spinal segments are not so diagrammatic as hitherto supposed. These relations vary somewhat at different portions of the spine, as he portrays in detail.

94. **Relations Between Diphtheria and Angina Phlegmonosa.**—Ernberg describes four cases of diphtheria which developed with the aspect of angina phlegmonosa. As the patients were adults the possibility of diphtheria was not borne so prominently in mind as if they had been children. In differentiating such cases the lack of severe general symptoms at first—in comparison with the intensity of the throat process—speaks in favor of diphtheria, also the pronounced swelling of the soft palate and the characteristic fetor ex ore. The local findings and symptoms seem to be identical in each disease, but in his experience these cases of diphtheria which simulated an angina phlegmonosa proved to be all exceptionally malignant in their course. Energetic antitoxin treatment is indicated, therefore, whenever there is the least suspicion in regard to the true nature of an angina phlegmonosa.

95 and 101. **Catatonia.**—Svenson reproduces the photographs of eleven cases of catatonia and reviews the differentiating points. He noticed in all of them a peculiar limitation of the field of mental conceptions and a remarkable tenacity in the dominant conception, except in the cases of stupor. Eight of the patients were women, only one married. Three were men, two were married. He refers to the relations between familial myoclonia and catatonia, and Lundborg completes the

data in this line, as he has had occasion to see two cases in which myoclonia was associated with catatonia. Faber of Copenhagen described last year two cases in sisters; one was a typical myoclonia and the other had commenced as catatonia at the age of 17, and after the patient had been some time in the hospital the symptoms of familial myoclonia developed. He has collected in the literature 37 cases of familial myoclonia, but in 10 the patients had not reached the age of puberty, when catatonia is most liable. Omitting these cases, 3 of the remaining 20 exhibited many points in common with catatonia. Some of the cases are imperfectly reported, and it is possible that the two affections were associated in more than the 3 mentioned.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

GENITO-URINARY AND VENEREAL DISEASES. A Manual for Students and Practitioners. By Louis E. Schmidt, M.Sc., M.D., Associate Professor of Genito-Urinary Diseases, Chicago Policlinic. Series Edited by V. C. Pedersen, A.M., M.D., Recently Assistant Demonstrator of Anatomy, College of Physicians and Surgeons. Illustrated with 21 Engravings. Cloth. Pp. 249. Price, $1.00. Philadelphia and New York: Lea Brothers & Co.

AN INTRODUCTION TO DERMATOLOGY. By Norman Walker, M.D., Fellow of the Royal College of Physicians of Edinburgh. With 43 Full-Page Plates and 47 Illustrations in the Text. Second Edition, Revised and Enlarged. Cloth. Pp. 301. Price, $3.00. New York: Wm. Wood & Co. 1902.

TRANSACTIONS OF THE STATE MEDICAL ASSOCIATION OF TEXAS. Thirty-fourth Annual Session, Held at Dallas, Texas, May 6, 7, 8 and 9, 1902. Cloth. Pp. 587. Austin, Texas: Von Boeckmann, Schutze & Co. 1902.

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY. Thirty-second Annual Convention. By-laws and List of Members. Cloth. Pp. 452. Denver: Published for the Society. 1902.

THE PUBLIC AND THE DOCTOR. By a Regular Physician. Cloth. Pp. 149. Price, $0.50. Dallas, Texas: Published by Dr. B. E. Hadra.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., from October 25 to 31, inclusive:

Corbusier, Harold D., contract surgeon, U. S. A., is relieved from further duty in the Division of the Philippines, and upon the expiration of his present leave of absence will report in person to the commanding officer, Ft. Columbus, N. Y., for temporary duty, and by letter to the commanding general, Department of the East.

Davis, Wm. B., major and surgeon, U. S. A., is granted leave of absence for three months, to take effect on his being relieved from duty at Ft. Myer, Va.

Juenemann, Geo. F., contract surgeon, U. S. A., is granted leave of absence for one month.

Kemp, James F., contract surgeon, U. S. A., is granted leave of absence for one month.

McCallom, Francis M., asst.-surgeon, U. S. V., is honorably discharged from the service of the United States, to take effect Nov. 5, 1902, his services being no longer required.

Rhoads, Thomas L., first lieut. and asst.-surgeon, U. S. A., the leave granted in Special Orders No. 203, Sept. 11, 1902, Department of California, is extended one month.

Southall, Edward A., capt. and asst.-surgeon, U. S. V., is honorably discharged from the service of the United States, to take effect Nov. 6, 1902, his services being no longer required. He will proceed to his home.

By direction of the Secretary of War the following-named assistant-surgeons, U. S. A., recently appointed, now at the places indicated after their respective names, will report in person at 9 o'clock a. m., Nov. 6, 1902, at the Army Medical Museum, in this city, to Col. Calvin DeWitt, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, for the course of instruction prescribed in Paragraphs 542 and 543, Army Regulations, 1901:

First Lieut. Louis C. Duncan, Meriden, Kan.
First Lieut. Edward M. Talbott, Falls Church, Va.
First Lieut. John A. Clark, Washington, D. C.
First Lieut. Samuel J. Morris, Washington, D. C.
First Lieut. Noel I. Barron, Washington, D. C.
First Lieut. J. Morgan Coffin, Phœnixville, Pa.
First Lieut. John W. Hanner, Franklin, Tenn.
First Lieut. Levi M. Hathaway, Owensboro, Ky.
First Lieut. Alexander Murray, Alexandria, Va.
First Lieut. Philip W. Huntington, Washington, D. C.
First Lieut. James Carroll, Washington, D. C.
First Lieut. James D. Fife, Charlottesville, Va.
First Lieut. William A. Powell, Cairo, Ga.
First Lieut. Leon T. de Wald, New York City.
First Lieut. Jesse R. Harris, Kenmore, N. Y.
First Lieut. George H. Scott, Butler, Pa.
First Lieut. Edwin D. Kilbourne, Chicago.
First Lieut. Robert L. Carswell, Chattanooga, Tenn.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, week ending Nov. 1, 1902:

P. A. Surgeon W. B. Grove, detached from the *San Francisco* and ordered to the *Prairie*, for duty with the marine battalion aboard that vessel.

Asst.-Surgeon A. Stuart, ordered to duty at the naval hospital, Navy Yard, New York.

Asst.-Surgeon S. S. Rodman, detached from the *Alert*, and, when discharged from treatment at the naval hospital, Mare Island, Cal., ordered home and granted sick leave for two months.

Pharmacist F. T. Gordon, detached from the *Wabash* and ordered to the naval hospital, Boston, for treatment.

Surgeon H. E. Ames, ordered to the *Texas*.

P. A. Surgeon J. E. Page, detached from recruiting duty and ordered to the *Newark*.

Asst.-Surgeon A. W. Balch, detached from the *Monongahela* and ordered to the *Machias*.

Asst.-Surgeon C. H. De Lancy, detached from the *Buffalo* and ordered to recruiting duty with Ensign D. C. Hanrahan, at Knoxville, Tenn.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 30, 1902:

Assistant Surgeon-General H. D. Geddings, detailed to represent the service at the meeting of the Association of State and Provincial Health Officers at New Haven, Conn., October 28-29.

Surgeon W. P. McIntosh, granted leave of absence for 15 days from November 1.

Asst.-Surgeon J. F. Anderson, detailed as assistant director of the Hygienic Laboratory.

Asst.-Surgeon V. G. Heiser, to proceed to Washington, D. C., for duty.

Asst.-Surgeon Carl Ramus, granted 15 days' extension of leave of absence from October 25.

Asst.-Surgeon A. J. McLaughlin, relieved from duty in the Hygienic Laboratory and directed to proceed to New York City (Stapleton) and report to medical officer in command for duty and assignment to quarters.

A. A. Surgeon E. Alexander, granted leave of absence for 5 days from November 1.

A. A. Surgeon C. B. Ford, granted leave of absence for 15 days from Oct. 18, 1902, on account of sickness.

A. A. Surgeon E. T. Hargrave, granted leave of absence for 30 days from October 12.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Nov. 1, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 12-19, 3 cases.
Illinois: Chicago, Oct. 18-25, 7 cases.
Indiana: South Bend, Oct. 18-25, 1 case.
Maine: Biddeford, Oct. 18-25, 2 cases.
Massachusetts: Oct. 18-25, Cambridge, 2 cases; Malden, 1 case; Marlboro, 1 case.
New Hampshire: Oct. 18-25, Manchester, 1 case; Nashua, 18 cases.
New York: New York, Oct. 18-25, 3 cases.
Ohio: Cincinnati, Oct. 18-24, 4 cases; Cleveland, Oct. 18-25, 24 cases, 7 deaths; Youngstown, Oct. 18-25, 4 cases.
Pennsylvania: Oct. 18-25, Erie, 7 cases; Johnstown, 6 cases; McKeesport, 7 cases; Pittsburg, 43 cases, 4 deaths.
Utah: Salt Lake City, Oct. 18-25, 6 cases.
Wisconsin: Milwaukee, Oct. 18-25, 22 cases.

SMALLPOX—FOREIGN.

Barbados: Sept. 28-Oct. 13, 290 cases, 11 deaths.
Canada: Quebec, Oct. 11-18, 2 cases.
Ecuador: Guayaquil, Oct. 4-11, 4 deaths.
France: Rheims, Oct. 5-12, 1 case.
Gibraltar: Oct. 5-12, 1 case.
Great Britain: Bristol, Oct. 4-11, 1 case; Edinburgh, Sept. 27-Oct. 4, 2 cases; Liverpool, Oct. 4-11, 5 cases, 1 death; London, Oct. 4-11, 2 cases; Manchester, Sept. 27-Oct. 4, 1 case.
India: Bombay, Sept. 23-30, 1 death; Madras, Sept. 13-19, 1 death.
Italy: Naples, Oct. 6-13, 4 cases; Palermo, Sept. 27-Oct. 11, 9 cases, 3 deaths.
Russia: Moscow, Sept. 27-Oct. 4, 1 case, 1 death; St. Petersburg, Sept. 27-Oct. 4, 5 cases, 3 deaths.

YELLOW FEVER.

Colombia: Panama, Oct. 13-20, 7 cases, 1 death.
Costa Rica: Port Limon, Oct. 16-23, 1 case.
Ecuador: Guayaquil, Oct. 4-11, 2 deaths.
Mexico: Mexico, Oct. 12-19, 1 death; Tuxpam, Oct. 14-21, 1 death; Vera Cruz, Oct. 18-25, 10 cases, 3 deaths.

CHOLERA.

China: New Chwang, Aug. 31-Sept. 13, 68 cases, 64 deaths.
Egypt: Oct. 12-18, 705 cases, 636 deaths; Alexandria, Sept. 27-Oct. 4, 129 cases, 120 deaths.
India: Bombay, Sept. 23-30, 1 death; Calcutta, Sept. 20-27, 11 deaths; Madras, Sept. 13-19, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 11, 1 case, 1 death; Oct. 16, 1 case, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, Oct. 16, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Sept. 23-30, 76 deaths; Calcutta, Sept. 20-27, 15 deaths; Karachi, Sept. 21-28, 21 cases, 18 deaths.